100% NATEF Task Coverage

ATech

Automotive Technology

An ASE™ Certified Training Provider

ATech Training, Inc.

VOLUME 4

ATech Training, Inc.
A Veteran Owned and Operated American Company

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ATech Supports

NATEF
National Automotive Technicians Education Foundation

ATech's Free Products and Services

To assist all automotive educators, we offer the following in an effort to keep you well informed, in this ever advancing world of automotive technology.

• INSTRUCTOR WORKSHOPS
These workshops provide technical seminars on topics of new technology and are presented at locations nationwide.

• FACTORY TRAINING
ATech offers regularly scheduled "factory" instructor training at its facility in Walton, Kentucky and other locations. Class sizes are limited to maximize contact with attendees.

• NEWSLETTERS
Contain information about current technology and anticipated future technology, as well as other items of interest to automotive technicians, instructors, students, and administrators.

• ASE/NATEF COMPATIBLE RECORD KEEPING SOFTWARE
This easy-to-use program (for personal computers) satisfies NATEF standard 6.6 and is available (free) on the Product CD-ROM.

• PRODUCT/DEMO CD-ROM
This CD-ROM demonstrates our Automotive Electricity 1810W, Automotive Electronics 1820W, Engine Control Fundamentals 3610, Engine Control Systems Operation 3620, Engine Diagnostic Fundamentals 3630, S.E.T. Software 18002VT1, and includes specifications for all our products. Also contains many useful teaching aids.

• CONSULTING SERVICES
Because of our continual involvement with the automotive industry and educational associations, we are able to offer informed, up-to-date, telephone assistance to help you develop or upgrade your automotive programs.

• WEB SITE
Contains newsletters, upcoming events, product information, employment opportunities, technical articles of interest, and new trainers. (www.atechtraining.com)

ATech's Free Products and Services

ATech Training, Inc.
A Veteran Owned and Operated American Company
Winner of the 2004 Automotive Training Managers Council
"Award of Excellence in Training Programs"

"Invitational" Instructor Workshops

The ATech "Invitational" Workshops are conducted periodically. The workshops are held at ATech in Walton, KY. Each group consists of Secondary, Post-Secondary, and Industrial Instructors. Technical topics and teaching techniques emphasizing "hands-on" instruction are presented and discussed. Over $1,000.00 of books and teaching materials are given to each Instructor attending. In addition, each workshop satisfies the 20 hour annual training requirement of NATEF.

ATech Training, Inc.

Turfway Park

Great American Ball Park

Newport Aquarium

Source: Northern Kentucky Convention and Visitors Bureau

Contact ATech Training to have your name added to the list for consideration.

ATech Training, Inc.
12290 Chandler Drive • Walton, KY 41094
Phone: 859-485-7229 Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

ATech Supports

AUTOMOTIVE CLASSROOM

"Convenient to, but separate from, the lab/shop area."
(Standard 8.6)

ATech Trainers

Automotive Electricity/Electronics
with optional Computer Based Instruction.

CD-ROM Multi-Media Stations

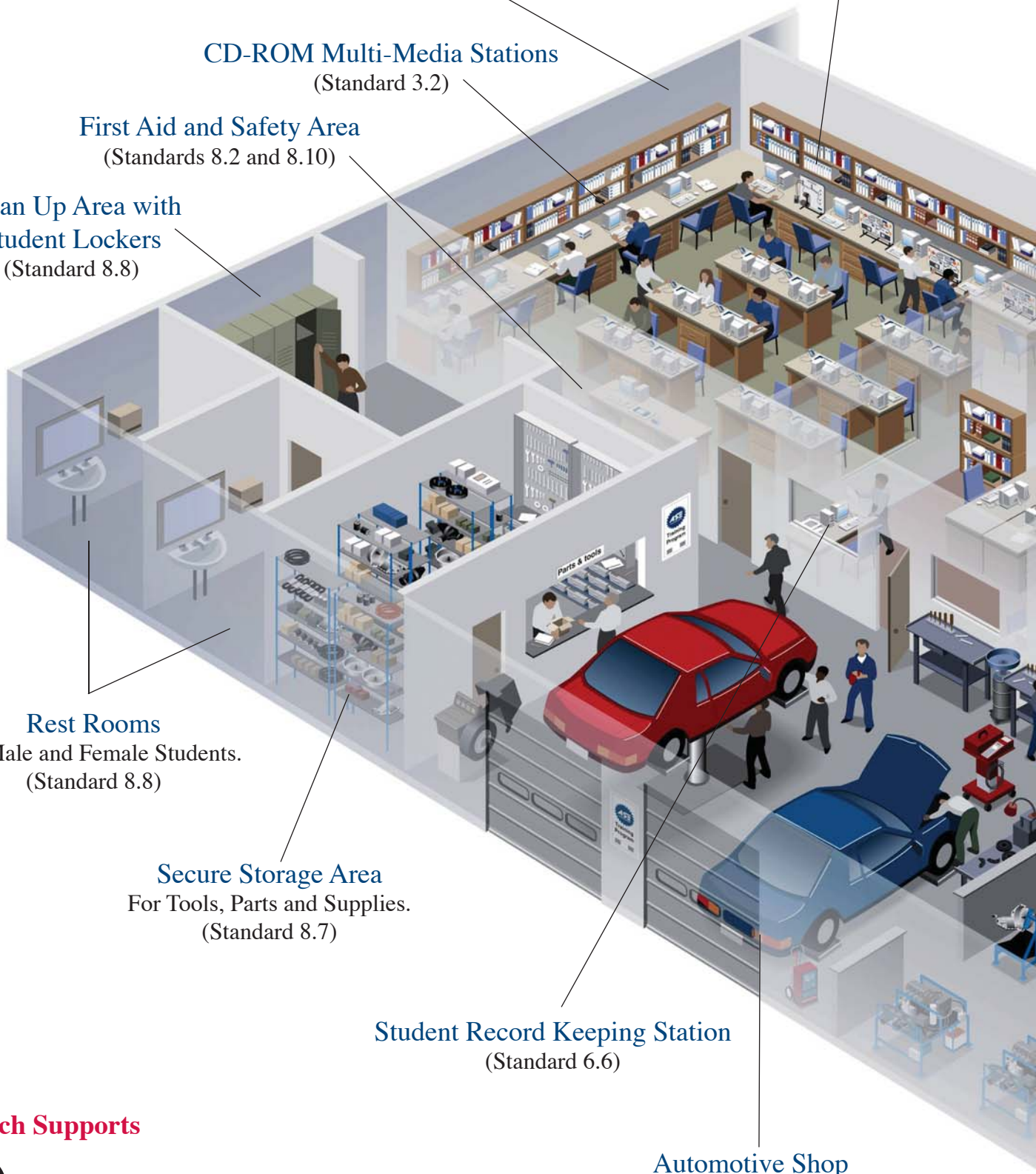
(Standard 3.2)

First Aid and Safety Area

(Standards 8.2 and 8.10)

Clean Up Area with Student Lockers

(Standard 8.8)



Rest Rooms

For Male and Female Students.
(Standard 8.8)

Secure Storage Area

For Tools, Parts and Supplies.
(Standard 8.7)

Student Record Keeping Station

(Standard 6.6)

Automotive Shop

To "supplement on-going instruction."
(Standard 6.15)

ATech Supports

NATEF
ASE CERTIFIED
© National Automotive Technicians Education Foundation

Instructional Courseware

ATech offers complete courseware, including Student Manuals and Instructor Guides, prepared for use with each instruction module. All work sheets are provided with a site license that permits free copying and free distribution to students. Factory reference books and service manual information are included with most courseware packages, along with NATEF Student Record Keeping Sheets. There are over 60 manuals of performance-based curriculum available from ATech, providing each student with individualized, hands-on study, including "on-trainer" and "on-vehicle" activities. Accompanying Instructor Guides include worksheet answers and other materials that facilitate the administration of the training programs. Free NATEF Student Record Keeping Software is available on the Product/Demo CD-ROM.

ATech Instructional Courseware
Student-oriented Learning Materials.
(Standards 6.1 and 6.2)

Office Space
"Separate and Convenient for Instructor's use."
(Standard 8.5)

Storage Space
For Instructional Supplies and Miscellaneous Items.
(Standard 8.7)

Service Information Library
For Storage and Organization of Service Information and Professional Periodicals.
(Standards 3.1 and 3.4)

ATech Instructional Courseware
Performance-based Curriculum.
(Standard 6.7)

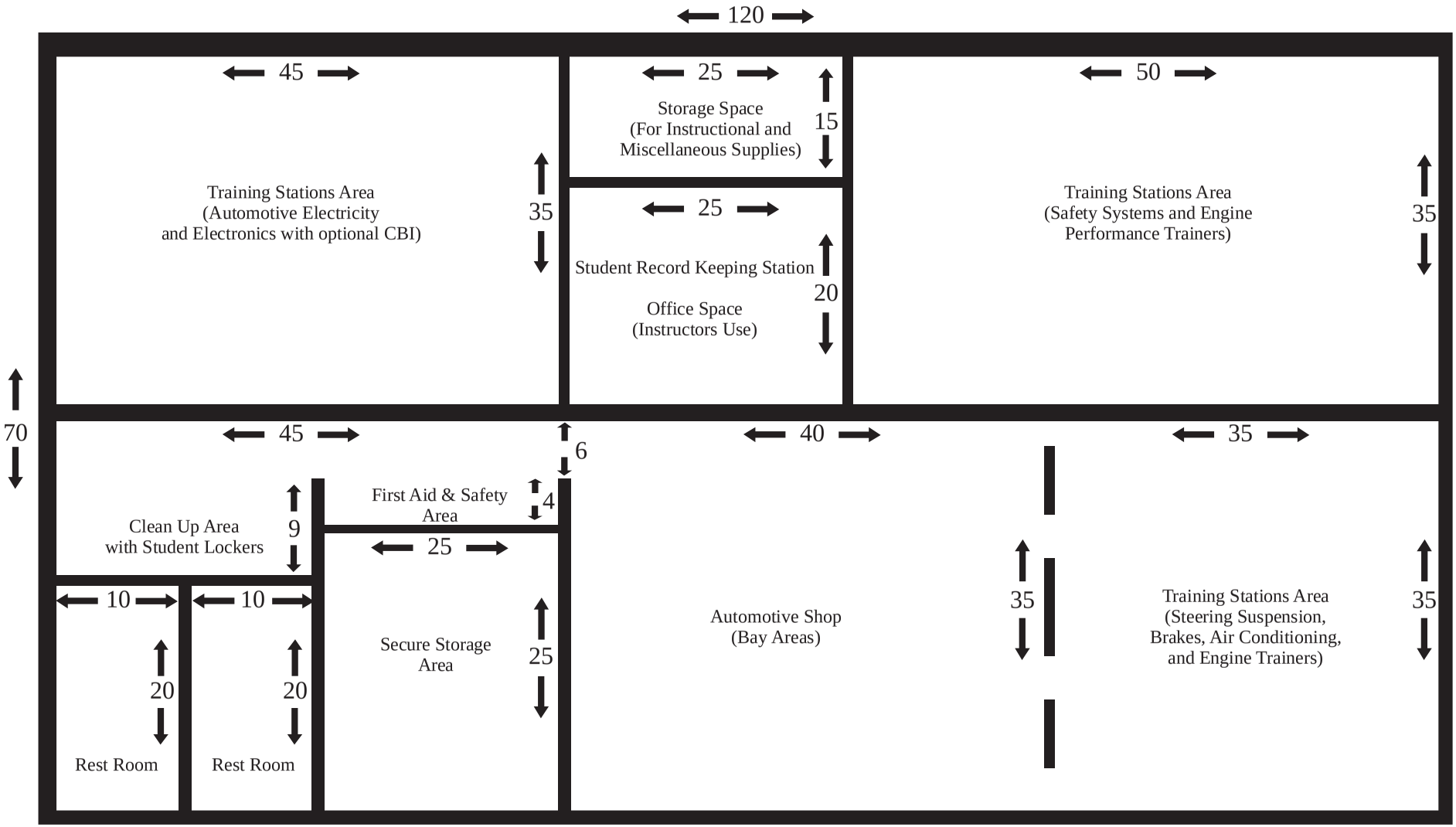
ATech Trainers
Automotive Safety System Training Stations.

ATech Trainers
Engine Performance Training Stations.

ATech Trainers
Steering Suspension, Brakes, Air Conditioning, Transmission and Engine Training Stations.

Automotive Technology Lab

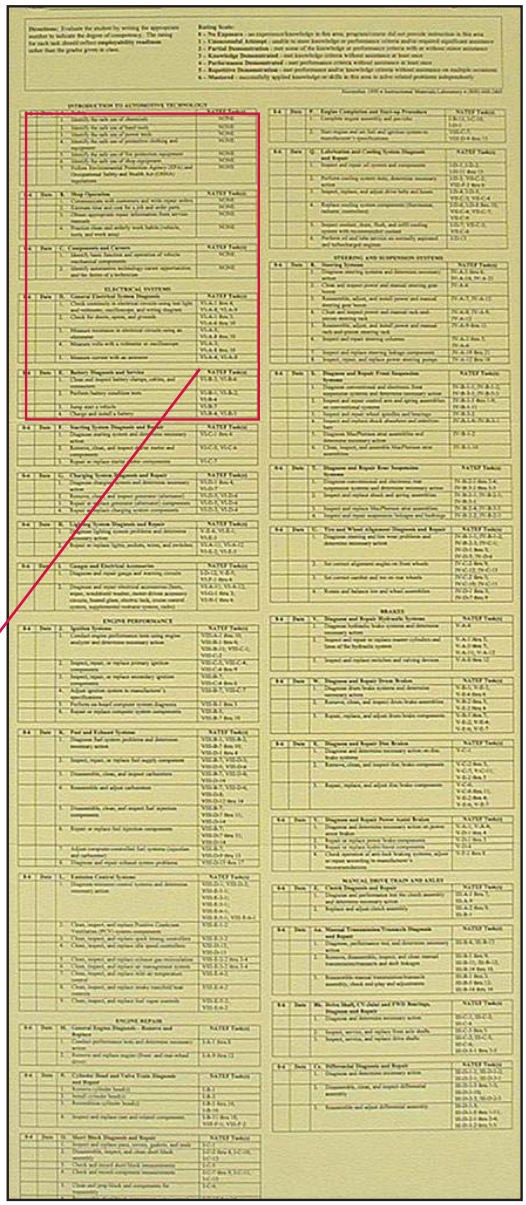
8400 Square Feet



NATEF Curriculum- 100% Task Coverage

ATech Training, Inc. and the Instructional Materials Laboratory of the University of Missouri- Columbia have agreed to a collaborative effort of courseware and equipment development. The IML curriculum package will include references to instructional activities on the relevant ATech Training systems. The A6- Electrical/Electronics section has been completed. Other sections will be completed as development continues. The 11 CD-ROM program covers all NATEF tasks. Coverage is also included of Safety, Shop Operation, Components and Careers.

The CD-ROM curriculum is in Portable Document Format (PDF) and can be accessed using Adobe Acrobat Reader on either PC or Macintosh platforms. Job sheets, assignment sheets and tests are also on the CD as Rich Text Files (RTF) that can be opened by most word processing programs. RTF enables the instructor to customize components to reflect available equipment and individual teaching styles. This will enable students to use a computer to take the test or record job sheet performance. Contact ATech for individual CD and complete package pricing.



Student Task Performance Record

INTRODUCTION TO AUTOMOTIVE TECHNOLOGY

0-6	Date	A. Safety	NATEF Task(s)
		1. Identify the safe use of chemicals	NONE
		2. Identify the safe use of hand tools	NONE
		3. Identify the safe use of power tools	NONE
		4. Identify the safe use of protective clothing and equipment	NONE
		5. Identify the safe use of fire protection equipment	NONE
		6. Identify the safe use of shop equipment	NONE
		7. Follow Environmental Protection Agency (EPA) and Occupational Safety and Health Act (OSHA) regulations	NONE

0-6	Date	B. Shop Operation	NATEF Task(s)
		1. Communicate with customers and write repair orders	NONE
		2. Estimate time and cost for a job and order parts	NONE
		3. Obtain appropriate repair information from service manuals	NONE
		4. Practice clean and orderly work habits (vehicle, tools, and work area)	NONE

0-6	Date	C. Components and Careers	NATEF Task(s)
		1. Identify basic function and operation of vehicle mechanical components	NONE
		2. Identify automotive technology career opportunities and the duties of a technician	NONE

ELECTRICAL SYSTEMS

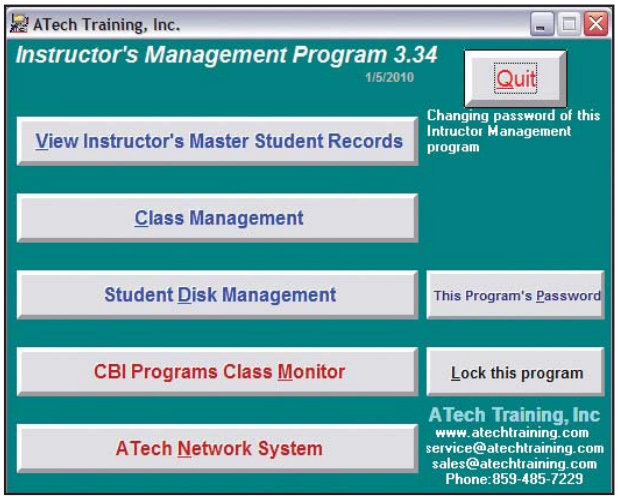
0-6	Date	D. General Electrical System Diagnosis	NATEF Task(s)
		1. Check continuity in electrical circuits using test light and voltmeter, oscilloscope, and wiring diagram	VI-A-1 thru 4; VI-A-8; VI-A-9
		2. Check for shorts, opens, and grounds	VI-A-1 thru 3; VI-A-6 thru 10
		3. Measure resistance in electrical circuits using an ohmmeter	VI-A-5; VI-A-8 thru 10
		4. Measure volts with a voltmeter or oscilloscope	VI-A-3; VI-A-8 thru 10
		5. Measure current with an ammeter	VI-A-4; VI-A-8

0-6	Date	E. Battery Diagnosis and Service	NATEF Task(s)
		1. Clean and inspect battery clamps, cables, and connectors	VI-B-3; VI-B-6
		2. Perform battery condition tests	VI-B-1; VI-B-2; VI-B-4
		3. Jump start a vehicle	VI-B-7
		4. Charge and install a battery	VI-B-4; VI-B-5

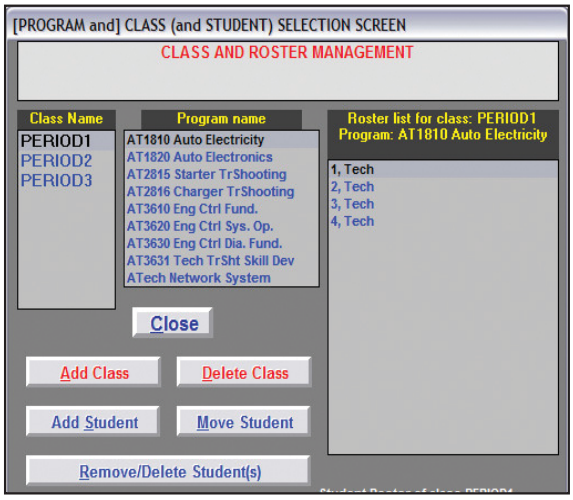
Task List Section

ATech Automotive Technology & IML

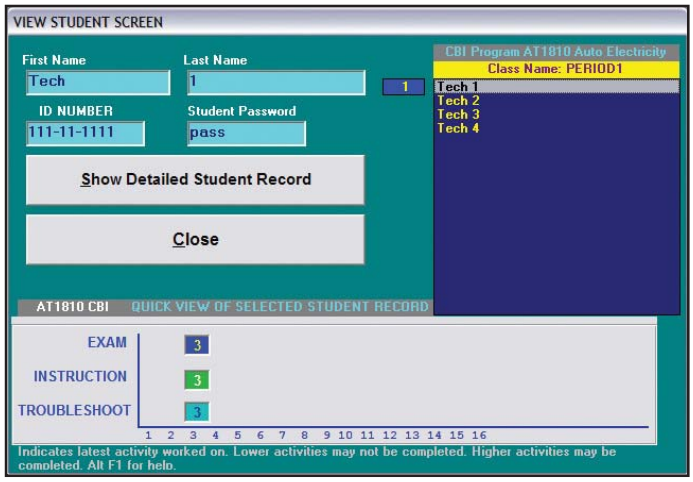
Instructor's Management Program (IMP)



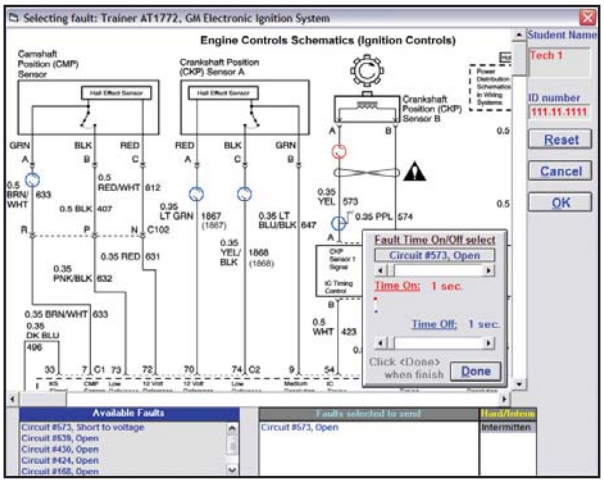
Initial IMP Selection Screen



Class Addition Screen



View Student Records

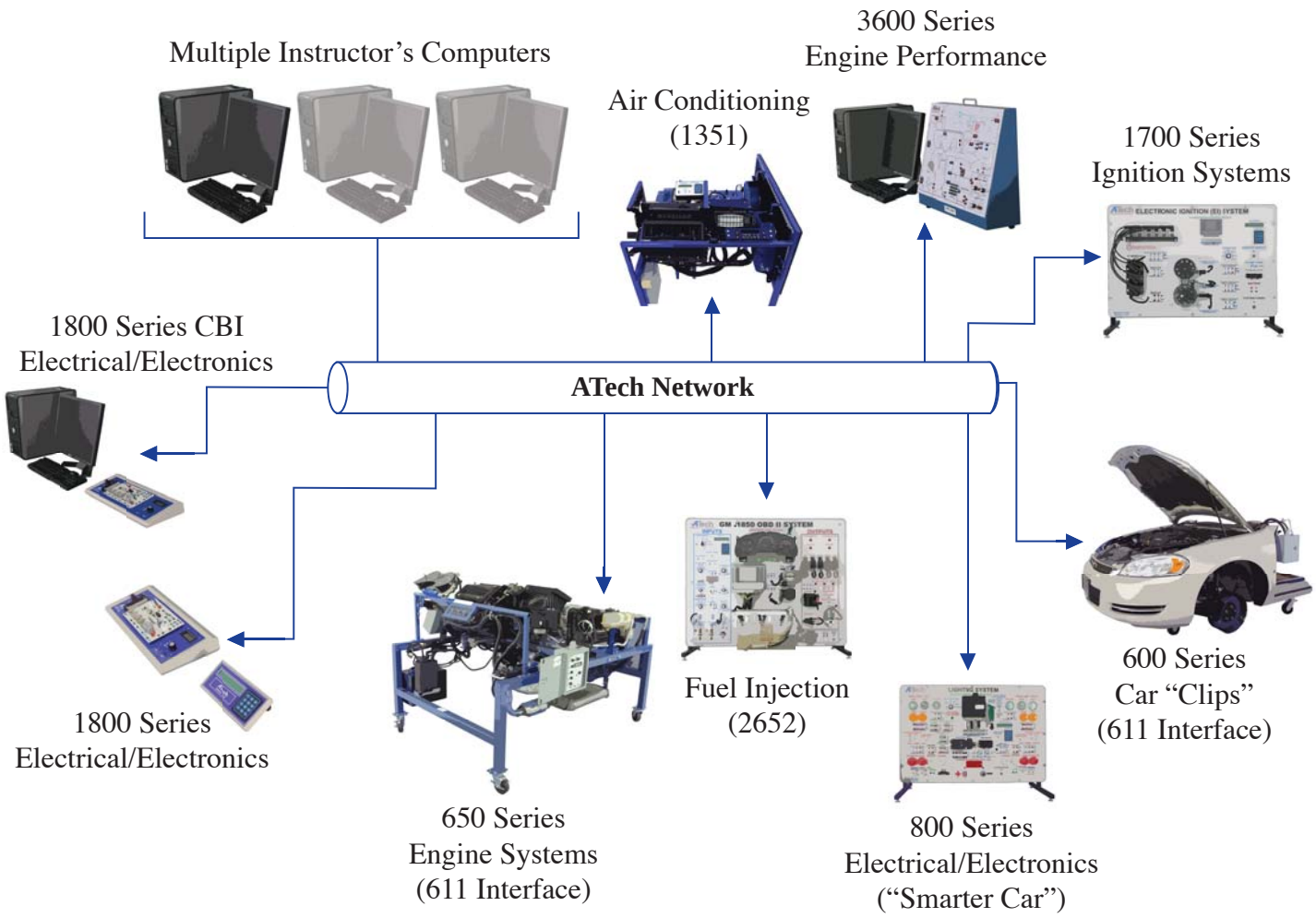


Intermittent Fault Insertion and Adjustment

Compatible CBI Programs and Trainers

- 1810W Automotive Electricity
- 1820W Automotive Electronics
- 2815 Starting System Troubleshooting
- 2816 Charging System Troubleshooting
- 3610 Engine Control Fundamentals
- 3620 Engine Control Systems Operation
- 3630 Engine Control Diagnostic Fundamentals
- 3631 Computer Based Troubleshooting Skill
- 310F Cooling Fan
- 320F Blower Motor
- 811FJ Starting System
- 812FJ Charging System
- 821FJ Lighting System
- 822FJ Instrument Panel
- 830FJ Interval Wiper/Washer
- 840FJ Power Windows
- 850FJ Power Door Lock
- 860FJ Power Seat
- 3801 J1850 Network Trainer
- 640 EVAP Trainer
- 2652 GM J1850 OBD II System
- 1351 A/C Trainer
- 1772 GM Electronic Ignition (EI) System
- 1551 GM SIR Dual Air Bag Trainer
- 1711F GM Direct Ignition System Faulted
- 1771SF C^{3}I Suitcase Faulted
- 1791F EDIS-V Faulted
- 18002TT GM S.E.T. Troubleshooting Trainer
- 611 Vehicle Computer Controlled Fault Insertion

Networkable Systems



Most of ATech's training systems are offered in a Networkable configuration.

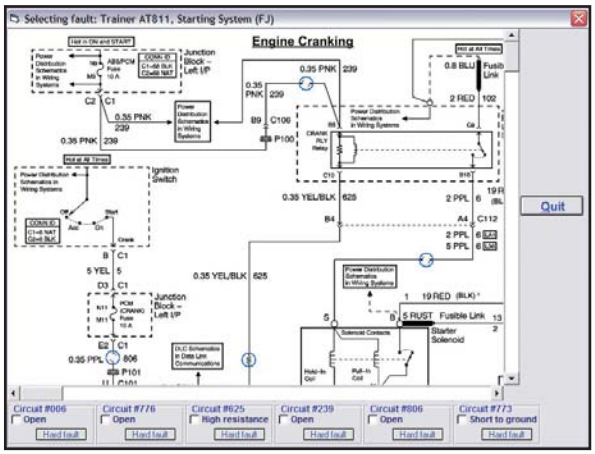
Specification Highlights are:

- Operates with Microsoft™ Networks, does not require proprietary networking.
- Monitor students' activities from any networked computer running the Instructor's Management Program (Instructor's Computer).
- Instructor's Computer can be located anywhere on the network.
- Single and/or multiple faults can be inserted in student training system(s) from the Instructor's Computer.
- Instructor's computer automatically locates new trainers when connected to the network.
- Students log in with individual identification.
- Students appear on Instructor's Computer properly located and identified upon log in.
- Student activity records are stored in a selected central location.

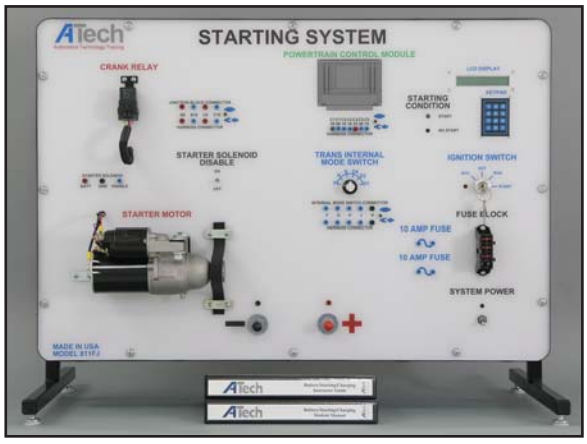
Networkable Systems

Representative Faulting Screens:

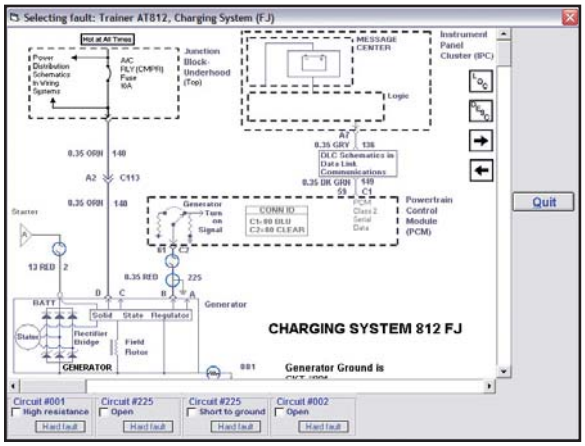
ATech 800 Series Trainers



Fault Insertion Screen for Starting System

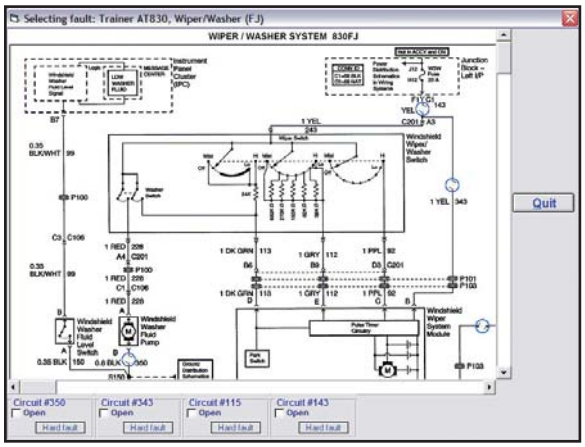


ATech Model 811FJ



Fault Insertion Screen for Charging System

ATech Model 812FJ



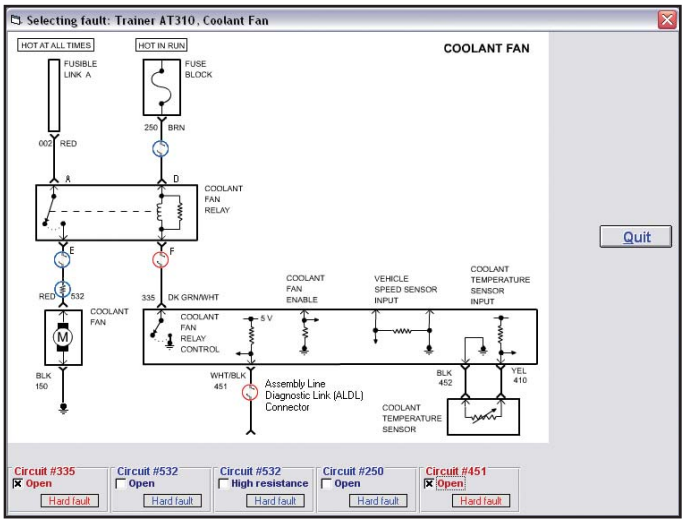
Fault Insertion Screen for Wiper/Washer System

ATech Model 830FJ

Networkable Systems

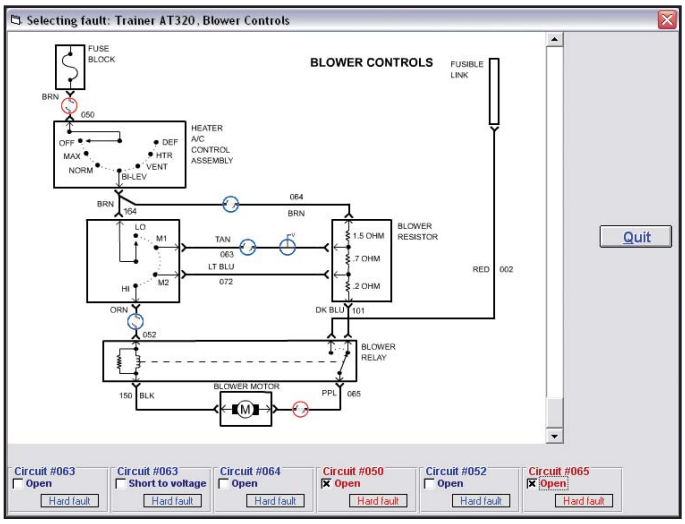
Representative Faulting Screens:

ATech 300 Series Trainers



Fault Insertion Screen for Coolant Fan

ATech Model 310F



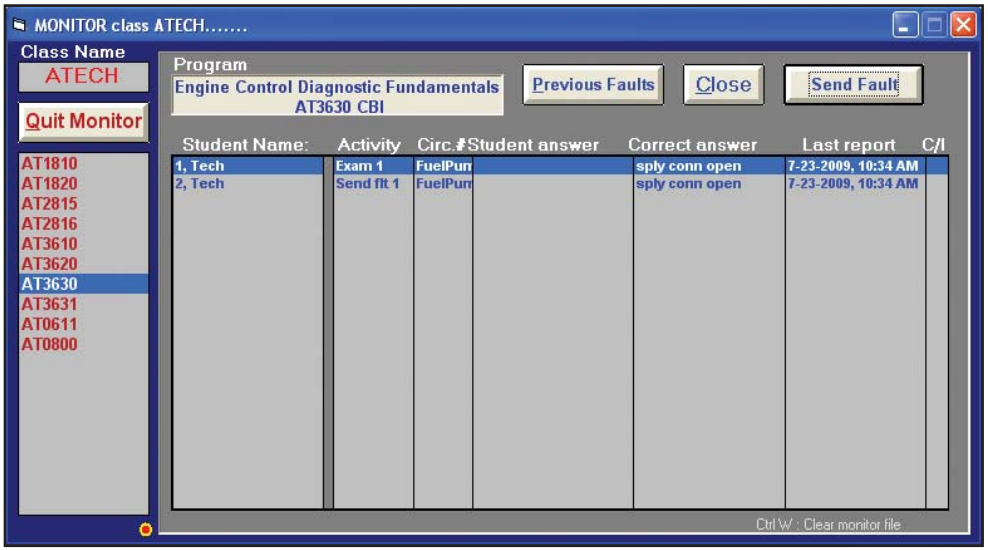
Fault Insertion Screen for Blower Controls

ATech Model 320F

Networkable Systems

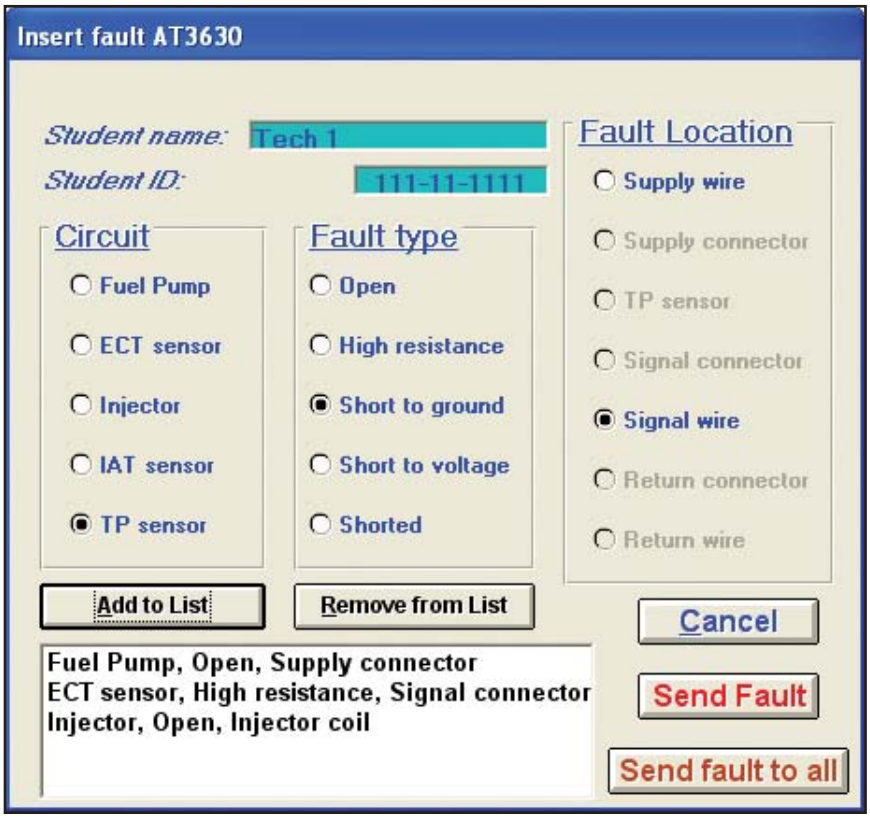
Representative Faulting Screens:

ATech 3600 Series Trainers



Fault Monitoring Screen

ATech Model 3601

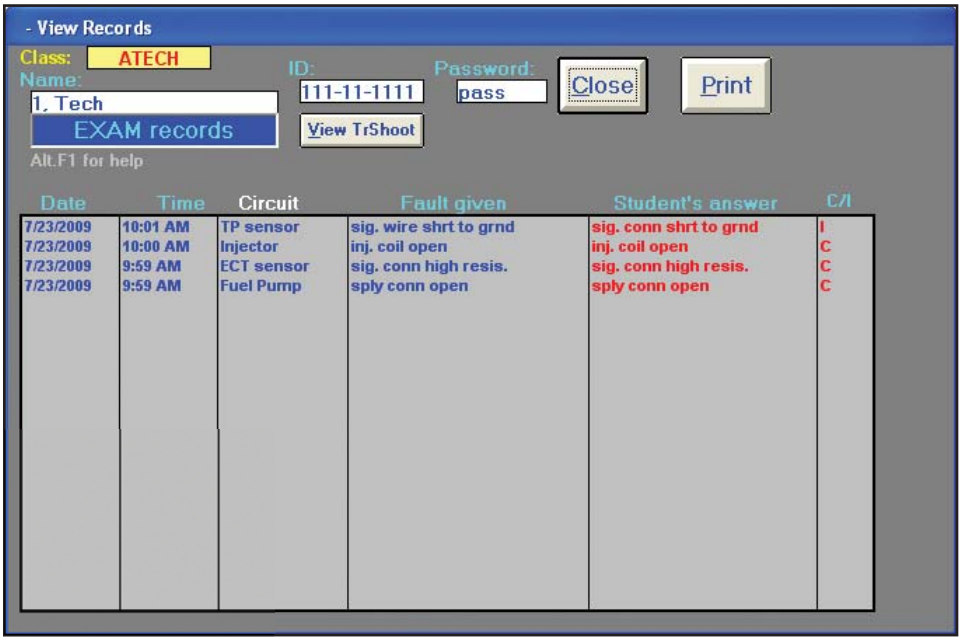


Fault Insertion Screen for 3630

Networkable Systems

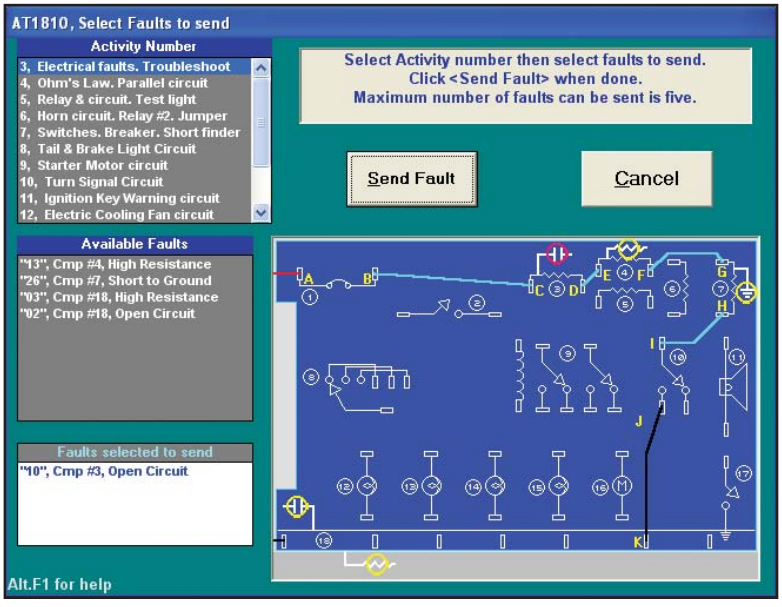
Representative Faulting Screens:

ATech 1800 Series Trainers


- View Records
Class: ATECH
Name:
1, Tech
EXAM records
Alt.F1 for help
ID:
111-11-1111
Password:
pass
Close
Print
View TrShoot
Date Time Circuit Fault given Student's answer C/I
7/23/2009 10:01 AM TP sensor sig. wire shrt to grnd sig. conn shrt to grnd I
7/23/2009 10:00 AM Injector inj. coil open inj. coil open C
7/23/2009 9:59 AM ECT sensor sig. conn high resis. sig. conn high resis. C
7/23/2009 9:59 AM Fuel Pump sply conn open sply conn open C

Diagnostic Record Screen

1800 Series


AT1810, Select Faults to send
Activity Number
3, Electrical faults. Troubleshoot
4, Ohm's Law. Parallel circuit
5, Relay & circuit. Test light
6, Horn circuit. Relay #2. Jumper
7, Switches. Breaker. Short finder
8, Tail & Brake Light Circuit
9, Starter Motor circuit
10, Turn Signal Circuit
11, Ignition Key Warning circuit
12, Electric Cooling Fan circuit
Select Activity number then select faults to send.
Click <Send Fault> when done.
Maximum number of faults can be sent is five.
Send Fault
Cancel
Available Faults
"13", Cmp #4, High Resistance
"26", Cmp #7, Short to Ground
"03", Cmp #18, High Resistance
"02", Cmp #18, Open Circuit
Faults selected to send
"10", Cmp #3, Open Circuit
Alt.F1 for help

Fault Insertion Screen for 1810

Next Generation "Smarter Car"

Starting System
Model 811FJ*

Charging System
Model 812FJ

Power Door Lock System
Model 850FJ

Wiper/Washer System
Model 830FJ*

Serial Hub (ANS16)

J1850 Buss

Lighting System
Model 821FJ

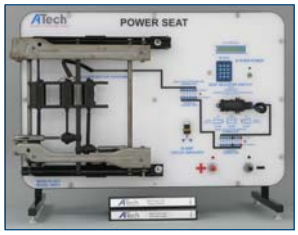
Instructor's Computer

Power Windows System
Model 840FJ*

Instrument Panel System
Model 822FJ

Optional Floor Model Legs
Model TFMJ

Keypad/Display
Interface



Power Seat System
Model 860FJ*

ATech's Next Generation "Smarter Car" configuration allows students to study and troubleshoot separate electrical/electronic systems simultaneously.

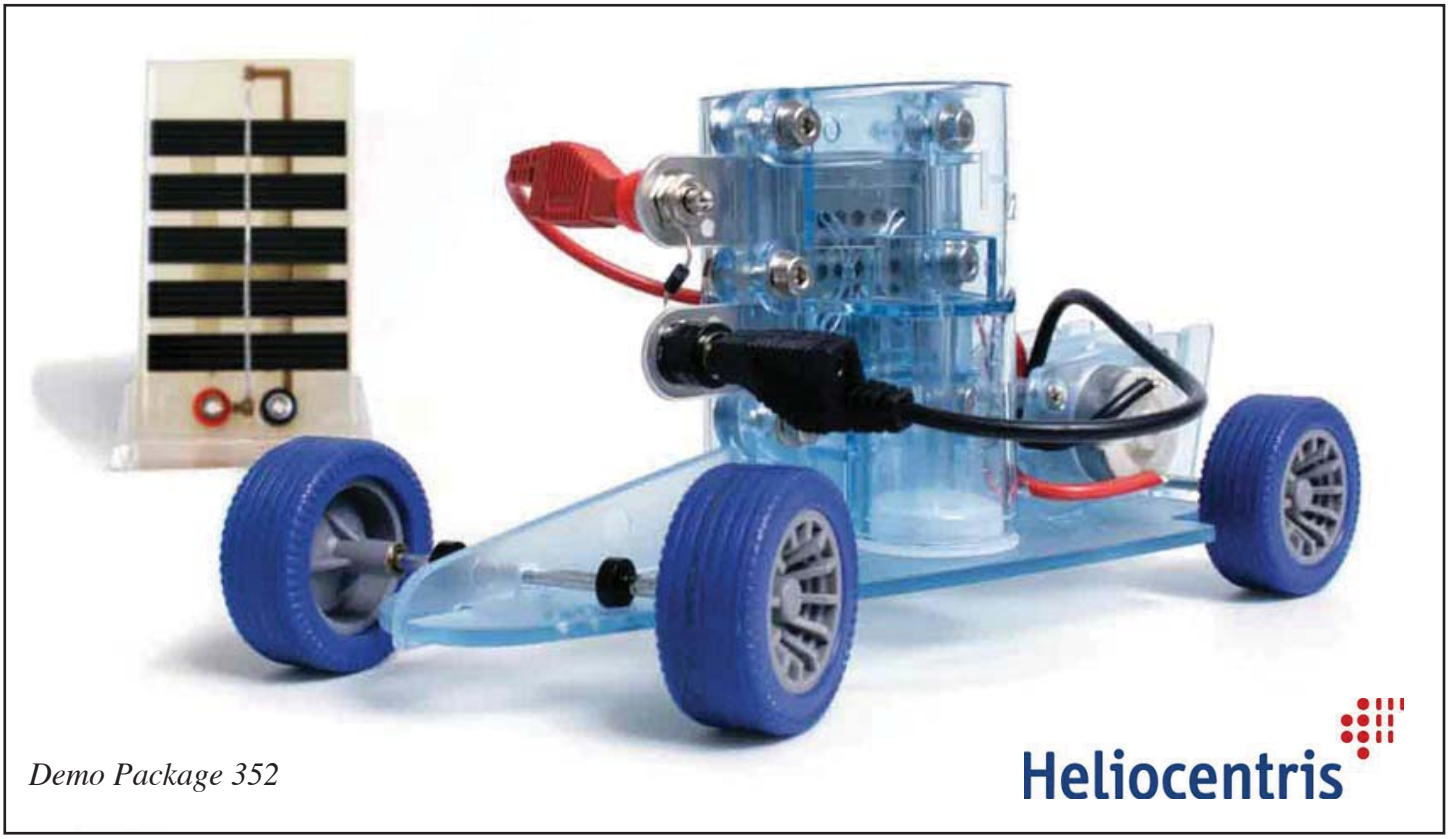
Features:

- Courseware Includes: Instructor Guide, Student Manual, and Service Information.
- Actual new vehicle components.
- Insert intermittent or hard faults using built-in Keypad, computer or ANS.
- Compatible with Instructor Management Program (IMP).
- Recommend Tech 2™ to communicate via the DLC Connector. (*Not Applicable)
- Requires 12V Battery or Power Supply (power supply can be purchased as an option).

For More Information:
Phone: (859) 485-7229
Fax: (859) 485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

Alternate Energy

Model Car with Reversible Fuel Cell
Dr FuelCell® Model Car

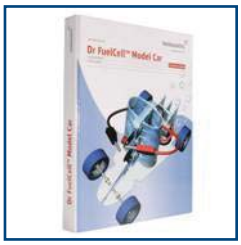


Demo Package 352

Heliocentris

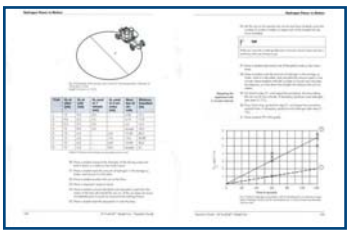
Details:

- Ready to use immediately; no additional materials required
- Quick class preparation with experiment materials that can be copied and printed
- Robust design and exceptional quality
- Variable setups- fuel cell, solar operation and hybrid
- Hands-on teaching of renewable energies
- Correlation with US National Science Education Standards
- Extensive features
- Flexible applications



Ring Binder

CD-ROM

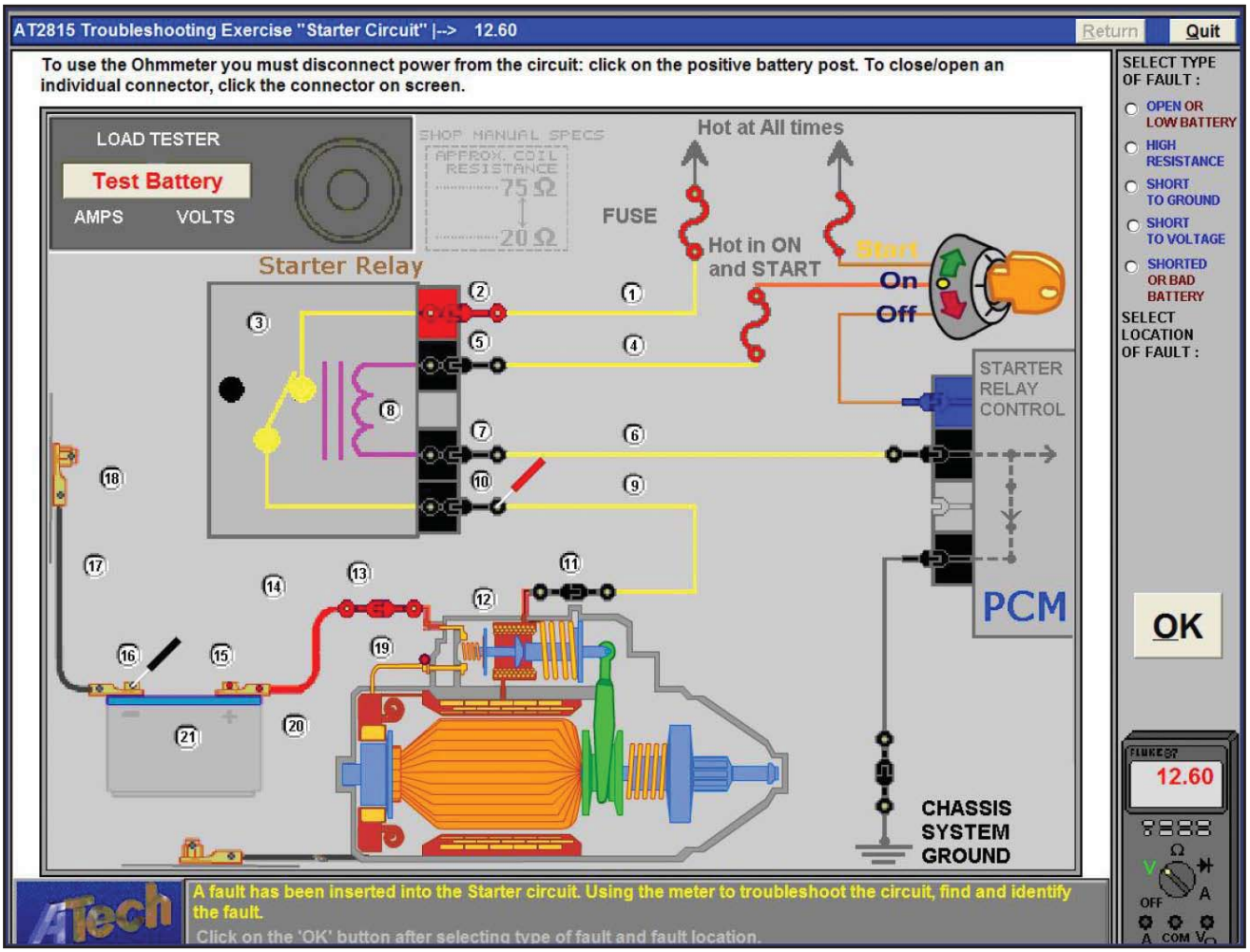


Preview of Teacher's Guide

For More Information:
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

ATech
Automotive Technology

Computer Based Instruction


AT2815 Troubleshooting Exercise "Starter Circuit" |--> 12.60
Return
Quit
To use the Ohmmeter you must disconnect power from the circuit: click on the positive battery post. To close/open an individual connector, click the connector on screen.
LOAD TESTER
Test Battery
AMPS
VOLTS
SHOP MANUAL SPECS
APPROX. COIL RESISTANCE
75 Ω
20 Ω
FUSE
Hot at All times
Hot in ON and START
Start
On
Off
Starter Relay
STARTER RELAY CONTROL
PCM
CHASSIS SYSTEM GROUND
SELECT TYPE OF FAULT :
OPEN OR LOW BATTERY
HIGH RESISTANCE
SHORT TO GROUND
SHORT TO VOLTAGE
SHORTED OR BAD BATTERY
SELECT LOCATION OF FAULT :
OK
12.60
A fault has been inserted into the Starter circuit. Using the meter to troubleshoot the circuit, find and identify the fault.
Click on the 'OK' button after selecting type of fault and fault location.
ATech

Starter, Battery and Tester Troubleshooting- Model 2815

The Starter, Battery and Tester Troubleshooting Trainer is a software program based on the Starting System and deals with the basic concepts of troubleshooting those automotive components. This program can operate in random mode where the faults are selected randomly for each circuit chosen, or the instructor can select a set of faults from various circuits to be activated as each student runs the program.

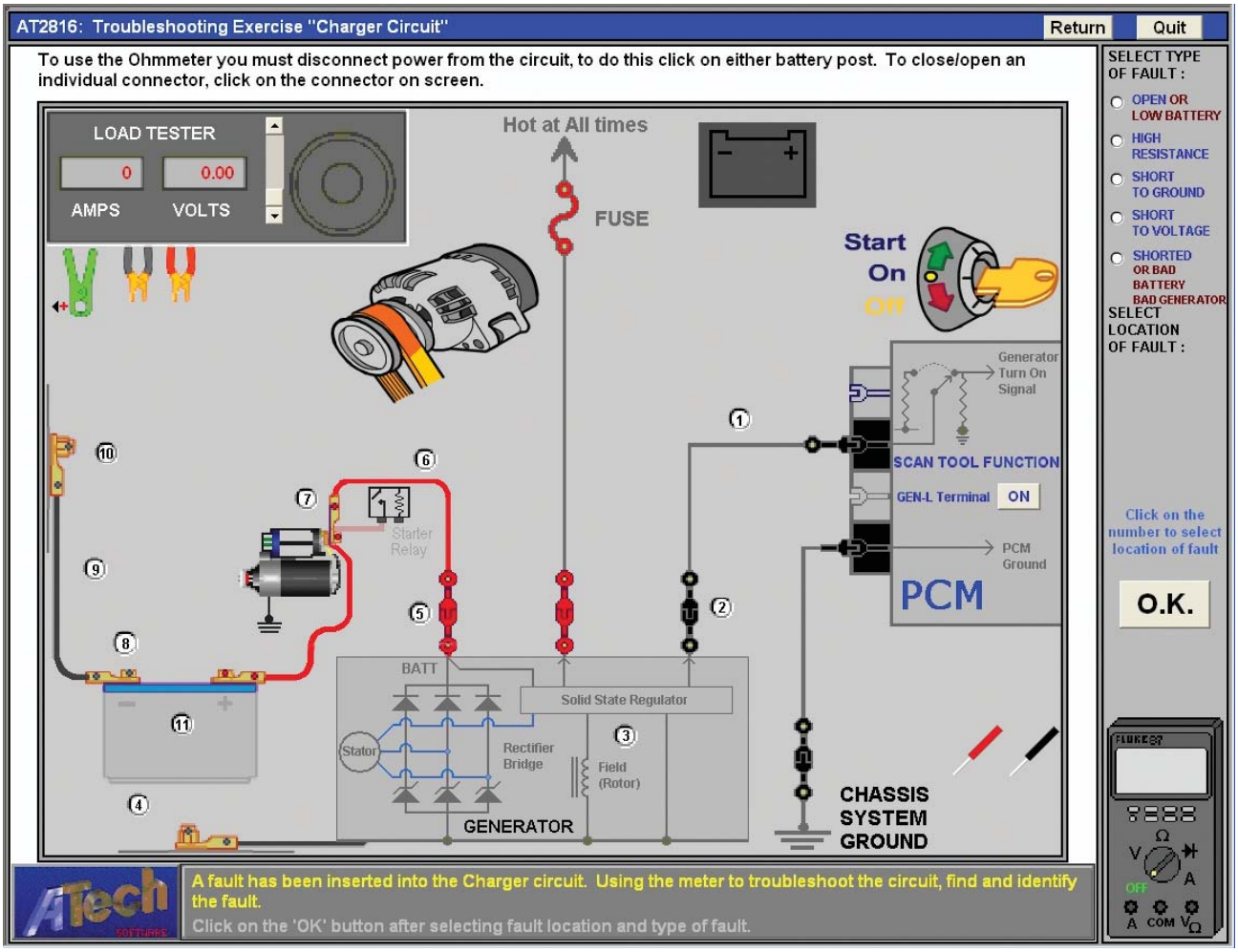
Features:

- Realistic operation of starter system.
- Built-in DVOM and Load Tester.
- Student performance is stored in Central Records or on a student disk as the student proceeds through the program.
- The IMP initializes the student record by assigning an I.D. number and password for the student to operate the program on the student computer.
- Audio reinforcement of circuit behavior.
- Network Version Available- Model 2815N

Activities Include:

- Troubleshooting section that will insert 47 possible faults into starting circuits to be diagnosed in the Training or Advanced Mode.

Computer Based Instruction



Charging System Troubleshooting- Model 2816

The Charging System Troubleshooting Trainer is a software program based on the Charging System and deals with the basic concepts of troubleshooting those automotive components. This program can operate in random mode where the faults are selected randomly for each circuit chosen, or the instructor can select a set of faults from various circuits to be activated as each student runs the program.

Features:

- Realistic operation of charging system.
- Built-in DVOM and Load Tester.
- Student performance is stored in Central Records or on a student disk as the student proceeds through the program.
- The IMP initializes the student record by assigning an I.D. number and password for the student to operate the program on the student computer.
- Audio reinforcement of circuit behavior.
- Network Version Available- Model 2816N

Activities Include:

- Troubleshooting section that will insert 19 possible faults into charging circuits to be diagnosed in the Training or Advanced Mode.

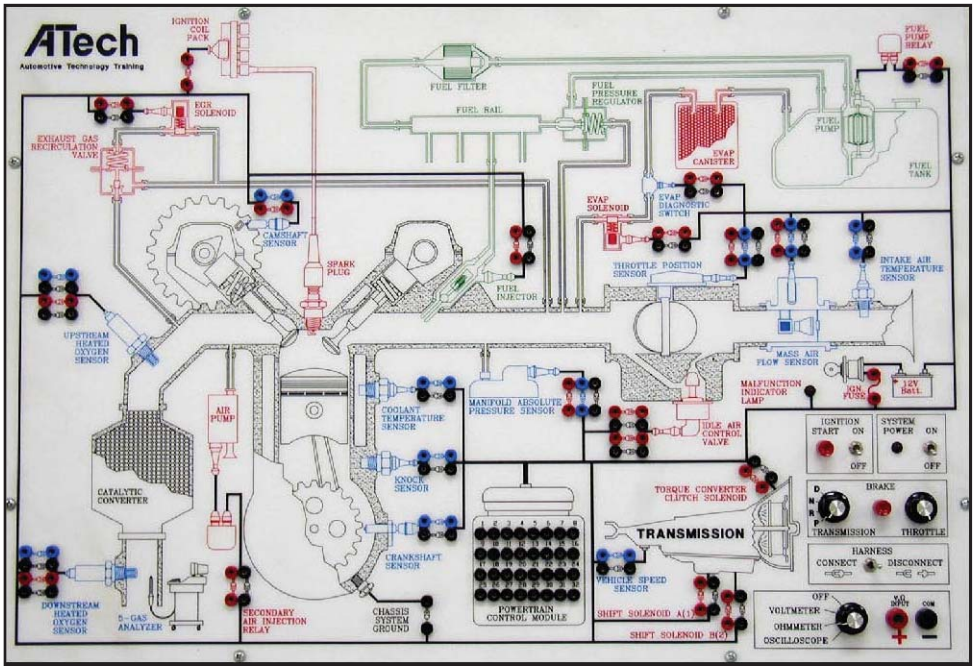
Computer Based Instruction

Computer Based Programs

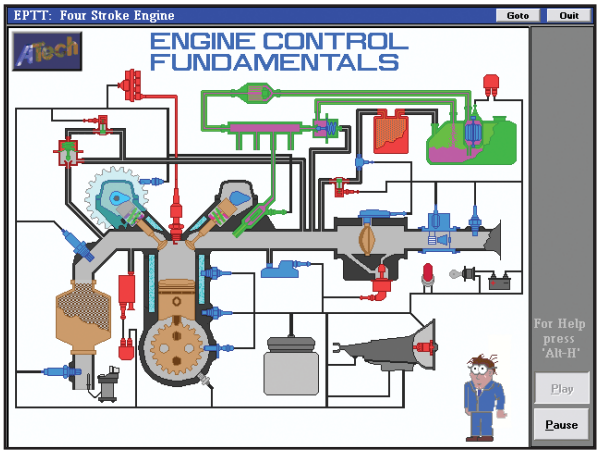
The #1 provider of Engine Performance Trainers offers computer based simulation. ATech's automotive fundamental programs harness the power of computers to enhance the learning experience with animations of important concepts. "Hands-on" activities provide "need-to-know" reinforcement, while computer controlled diagnosis provides troubleshooting practice and competency testing. Keeps students highly motivated.

Engine Performance Troubleshooting Trainer Model 3601

The ATech Engine Control Fundamentals Program includes the Model 3601 Engine Performance Troubleshooting Trainer. This platform will support 3610, 3620 and 3630 computer based courses and provides students with "hands-on" reinforcement.

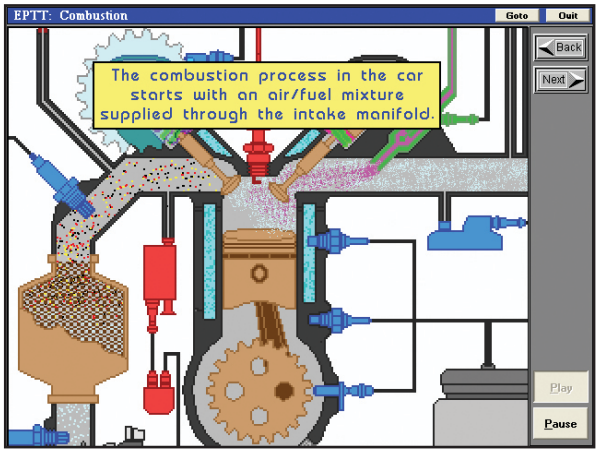


Computer Based Instruction



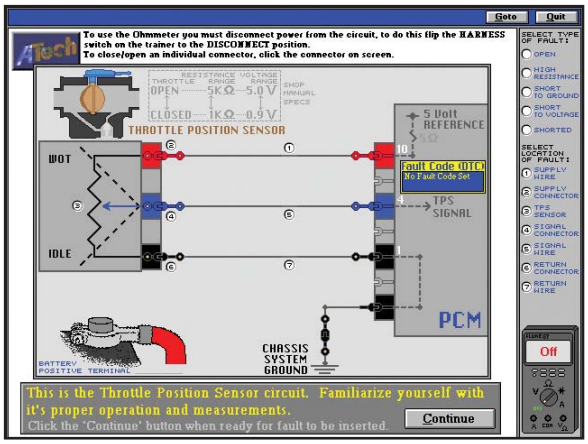
Engine Control Fundamentals Model 3610 CBI

This program consists of 21 student activities with over 60 animations- designed to present the fundamentals of engine control components. Includes "hands-on" digital voltmeter use.



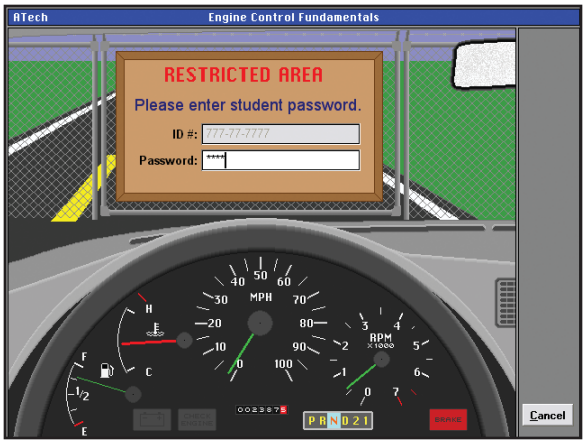
Engine Control Systems Operation Model 3620 CBI

This program consists of 14 student activities with over 60 animations- designed to present "closed loop" emission control systems. Includes "hands-on" voltmeter and oscilloscope use.



Engine Control Diagnostic Fundamentals Model 3630 CBI

This program consists of 16 student activities with over 45 animations- includes troubleshooting of 5 automotive circuits (Fuel Pump Relay, ECT, Fuel Injector, IAT, & TPS) with more than 60 faults. Includes instructor fault insertion capabilities.



Student Record Keeping

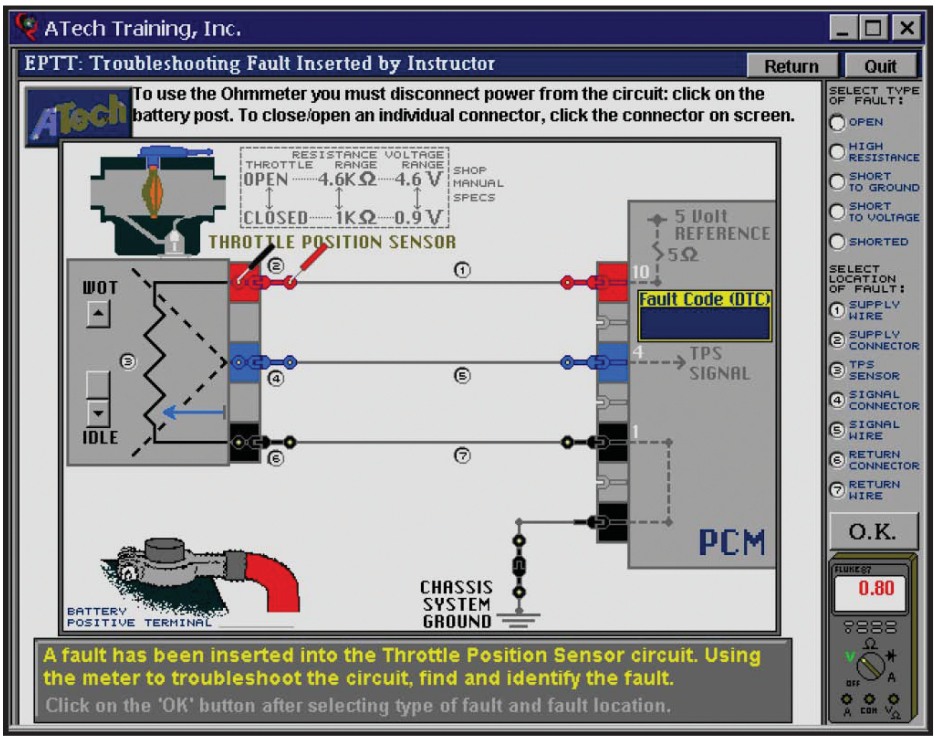
All programs provide student record keeping. Each student is issued a student record with a unique I.D. number and password. The student's performance is recorded in their file as the student proceeds through the program.

Classroom Management

Each program includes an Instructor's Management Program (IMP). With menu selections from the IMP, the student disk is prepared and records can be accumulated and transferred to the instructor's computer. Centralized storage of student records over a Microsoft™ network is also available. Program includes remote fault insertion capability.

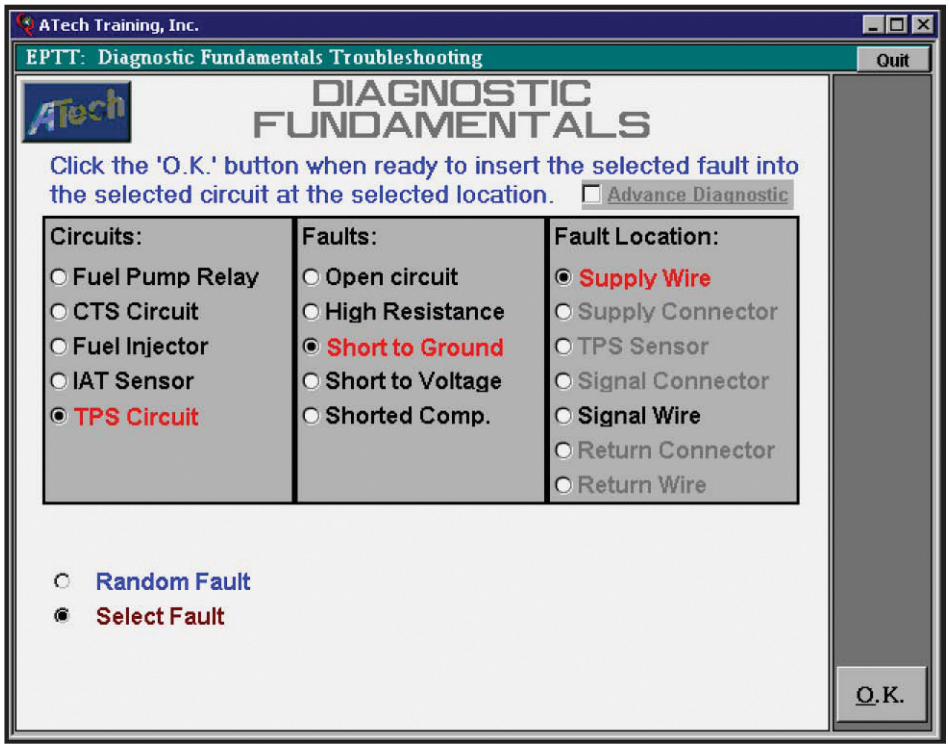
Computer Based Instruction

Computer Based Troubleshooting Skill Development
ATech 3631



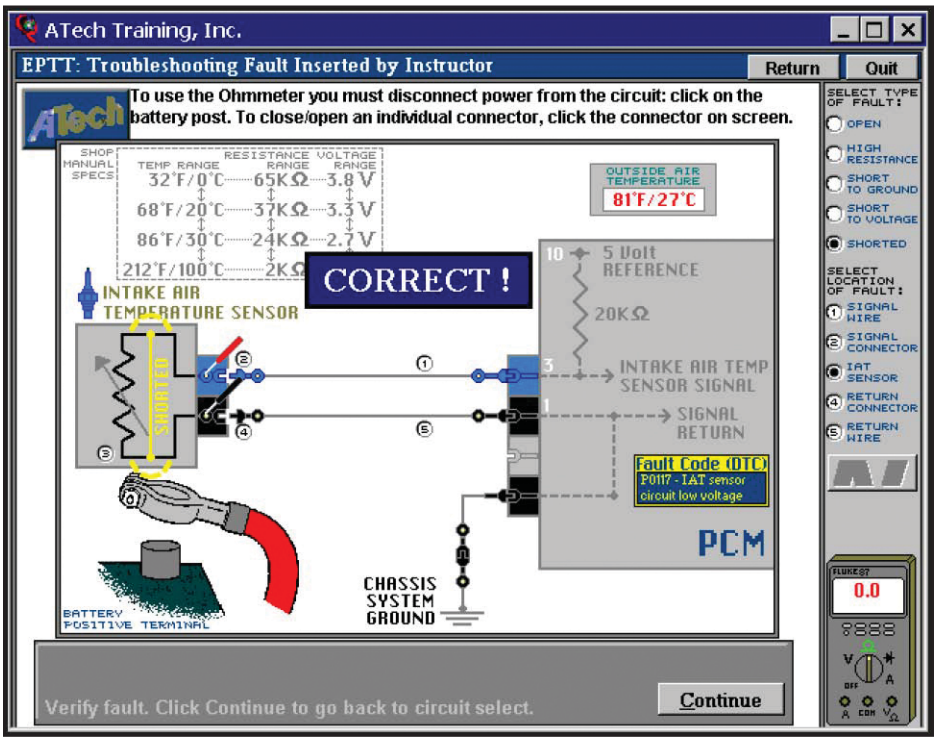
- Independent student practice- no instructor intervention required
- Selection of one of five circuits for troubleshooting:
  - Throttle Position Sensor
  - Fuel Pump and Relay
  - Fuel Injector
  - Engine Coolant Temperature Sensor
  - Intake Air Temperature Sensor
- Instructor can select circuit, fault type, and location
- Computer controlled automatic fault insertion and random fault mode
- Network Version Available- Model 3631N

- Over 60 real world faults
- Multiple fault types:
  - Open in Wires and Connectors
  - High Resistance in Wires and Connectors
  - Short to Voltage
  - Short to Ground
  - Open Components
  - Shorted Components
- Highly interactive:
  - TPS Circuit illustrates mechanical throttle valve operation
  - Click to Disconnect Battery
  - Slider adjusts TPS Position



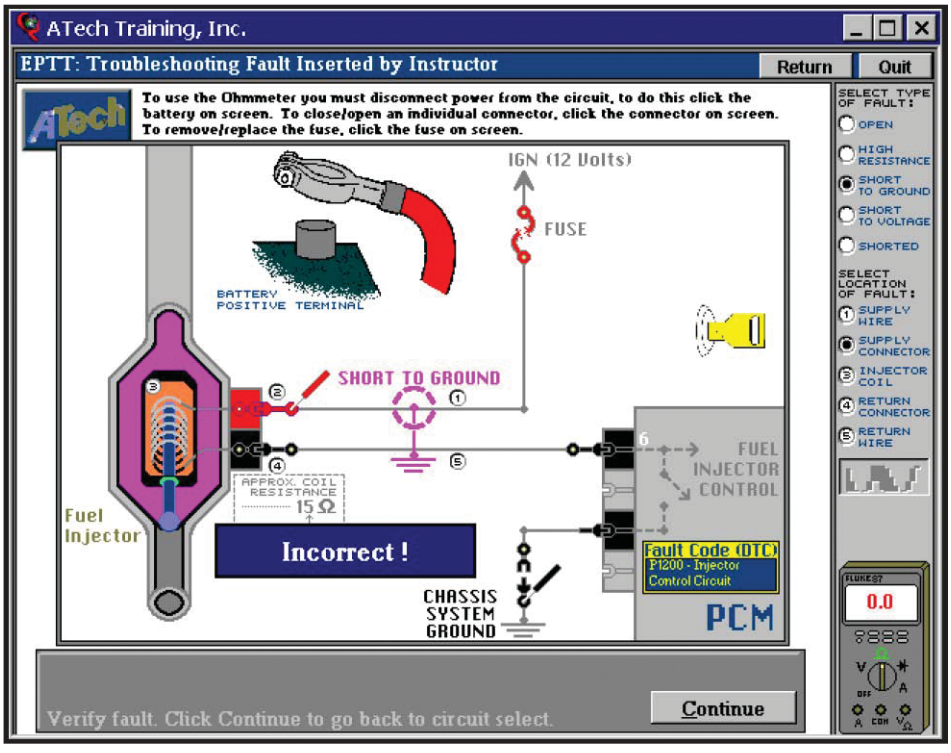
Computer Based Instruction

Computer Based Troubleshooting Skill Development
ATech 3631



- Service manual specifications included on screen
- Temperature- resistance relationships displayed on screen
- Built-in digital multimeter with interactive probes
- Real world DTCs shown on scan tool readout on screen
- Ohmmeter prompt given to disconnect circuit power
- Connectors may be disconnected
- Fuse may be removed and ground disconnected

- No repeated faults until all circuit faults have been initially completed
- Short to ground faults may blow fuses
- Two skill levels included:
  - -Training Mode
  - - Advanced Mode
- Training Mode allows measurement across connector pins
- Advanced Mode only allows back probing of connectors
- Probes automatically moved from disallowed connection points in Advanced Mode



Computer Based Instruction

ATech's Electricity and Electronic Programs are Computer Based Instruction, available for personal computers.

Computer Based Programs

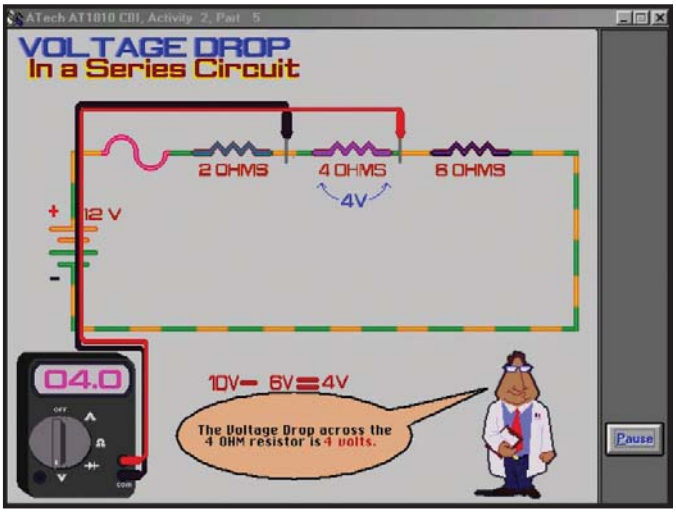
The #1 provider of Engine Performance Trainers continues to develop innovative computer based simulation programs...

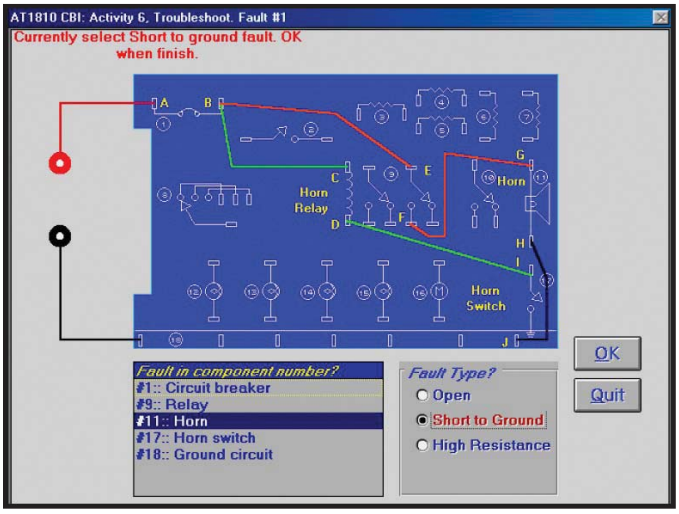
ATech's automotive fundamentals programs have harnessed the power of computers to enhance the learning experiences with animations of important concepts.

Hands-on activities provide "need-to-know" reinforcement, while computer controlled diagnosis provides troubleshooting practice and competency testing.

Invites student interest and participation.

- Automotive Electricity Computer Based Instruction (CBI) Software (Model 1810W)
- Automotive Electronics Computer Based Instruction (CBI) Software (Model 1820W)
- Hands-on and Computer Animation Hold Student Interest





- Provides Troubleshooting Practice and Competency Testing
- Classroom Management with Remote Fault Insertion Capability
- Student Record Keeping with Print-Outs

Electrical/Electronic Systems

ATech's Electricity and Electronics programs include four "hands-on" courses developed specifically for automotive/auto body/truck students and technicians. These courses require ATech's Troubleshooting Trainer (Model 1801B).

"...Automotive Electricity/Electronics is a difficult subject for high school students...We've found that ATech trainers, with their hands-on approach, have kept the students on task for longer periods of time without getting bored. We're looking forward to a greater percentage of our students mastering electrical/electronic tasks through use of the ATech system."

Cape Cod Regional Technical High School

Program Courses:

- Automotive "Need-to-Know" Courses:
  - Automotive Electricity- Model 1810A
  - Automotive Electronics- Model 1820A

- Automotive Technician Courses:
  - Automotive Sensors and Actuators- Model 1830
  - Automotive Computer Concepts- Model 1840 (Requires 1802 Keypad)
  - TP/MAP Component Board- Model 1841

Program Features:

- Used by Bosch, Ford, Chrysler, Nissan in U.S., Canada, Mexico, China, Brazil, Taiwan, Australia, Chile and Vietnam
- Used by hundreds of public and private schools since 1986
- Includes On-Trainer, Troubleshooting and In-Shop Worksheets
- A proven product for over 25 years
- Modular Design- Easy Updating
  - Fault Board- Model 1800FB
  - Interactive Keypad- Model 1802
  - Computer Based Instruction Models 1810W and 1820W (see page 24)

For More Information:
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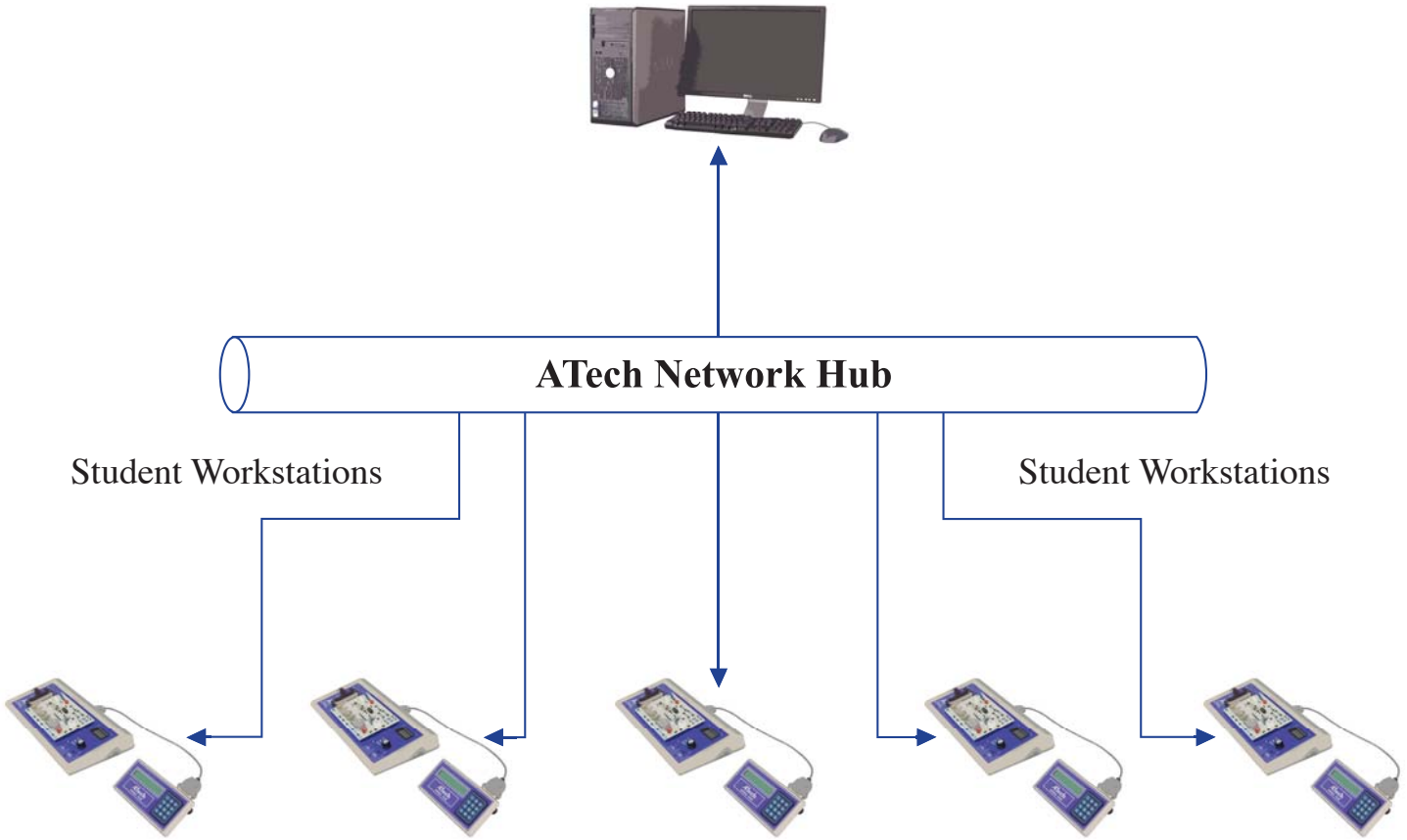
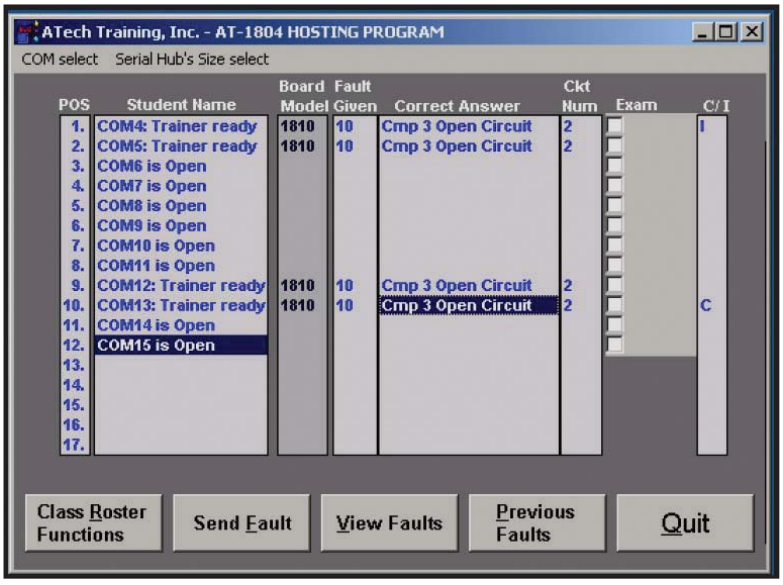
Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

Electrical/Electronic Systems



Network System for 1800 Trainers

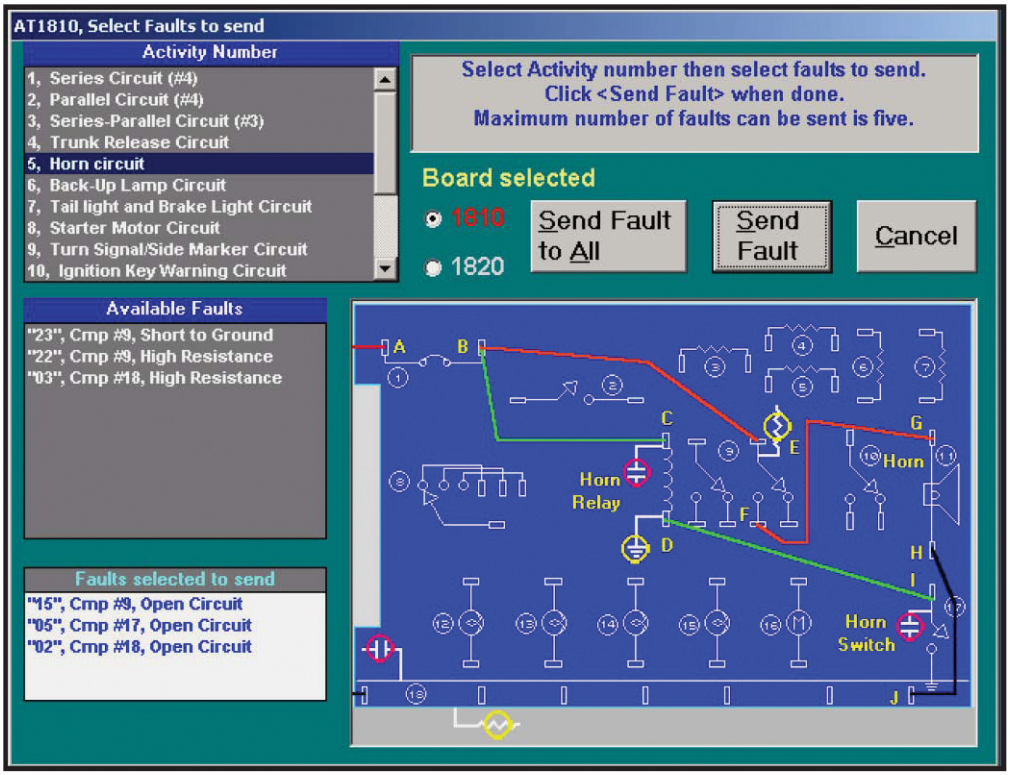
- Instructor-Led Troubleshooting Skill Development
- Quick setup for "On the Road" Training
- Fault Insertions in individual or all student stations from instructor's computer
- Up to 5 faults can be preselected for insertion
- Preselected faults will automatically be inserted in order of selection (when student completes one, next fault is given)
- Instructor's computer displays correct/incorrect result and stores results in student file
- Class Roster Functions selectable



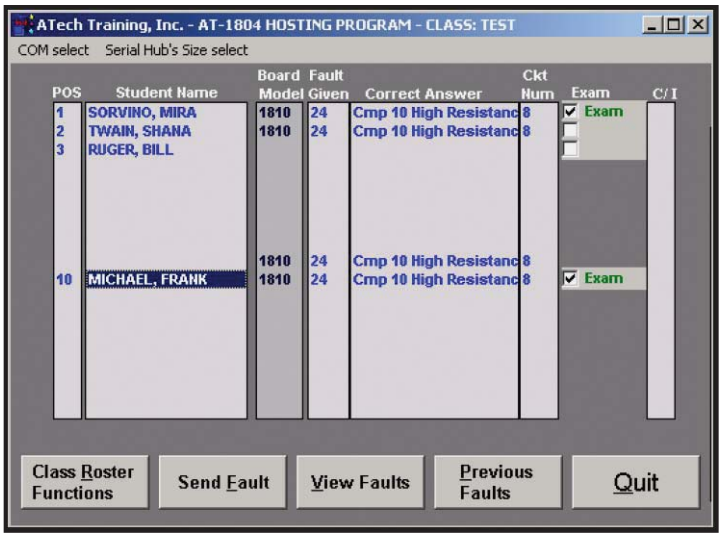
Instructor Monitor Screen

Electrical/Electronic Systems

- ATech's copyrighted "Schematic Based Fault Insertion"
- Fault Selection by 1800 Board and Activity Number
- Fault Selection from list or schematic indicator
- On Screen indication of selected faults
- "Build Your Own Circuit" capability, Instructor can select from all faults on board
- Troubleshooting practice or exam mode capability

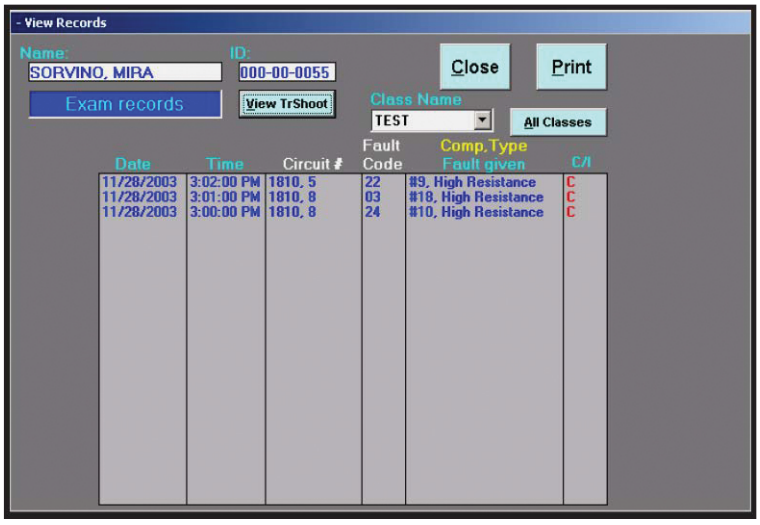


"Schematic Based Fault Insertion"



"Class Roster" Display with Individual Exam Mode

Individual Student Record



ATech
Automotive Technology

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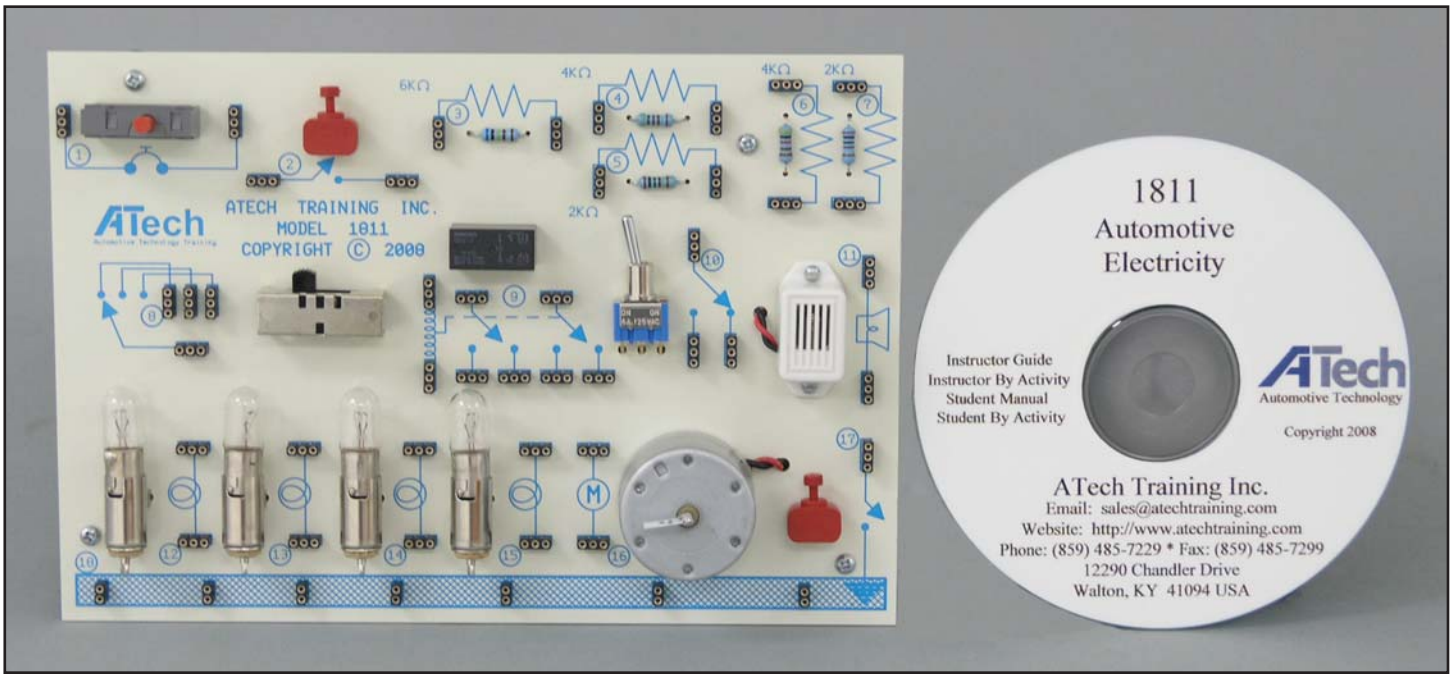
Electrical/Electronic Systems

Automotive Electricity Courseboard Model 1811



The Automotive Electricity Courseboard- Model 1811 is a hands-on study of basic automotive electricity that includes Courseboard and CD-ROM containing the Student Manual and Instructor Guide. Also included with the courseware package is an on-site copy license to allow for reproduction of instructional materials for use in the classroom.

The Automotive Electricity Courseboard features real fixed components and wire terminals. 12-Volt power supply not included. Does not include fault insertion capability.

Activities Include:

UNIT I- Introduction to Electricity
- Series Circuit- Use of Voltmeter
- Parallel Circuit- Use of Ammeter
- Series-Parallel Circuits- Use of Ohmmeter

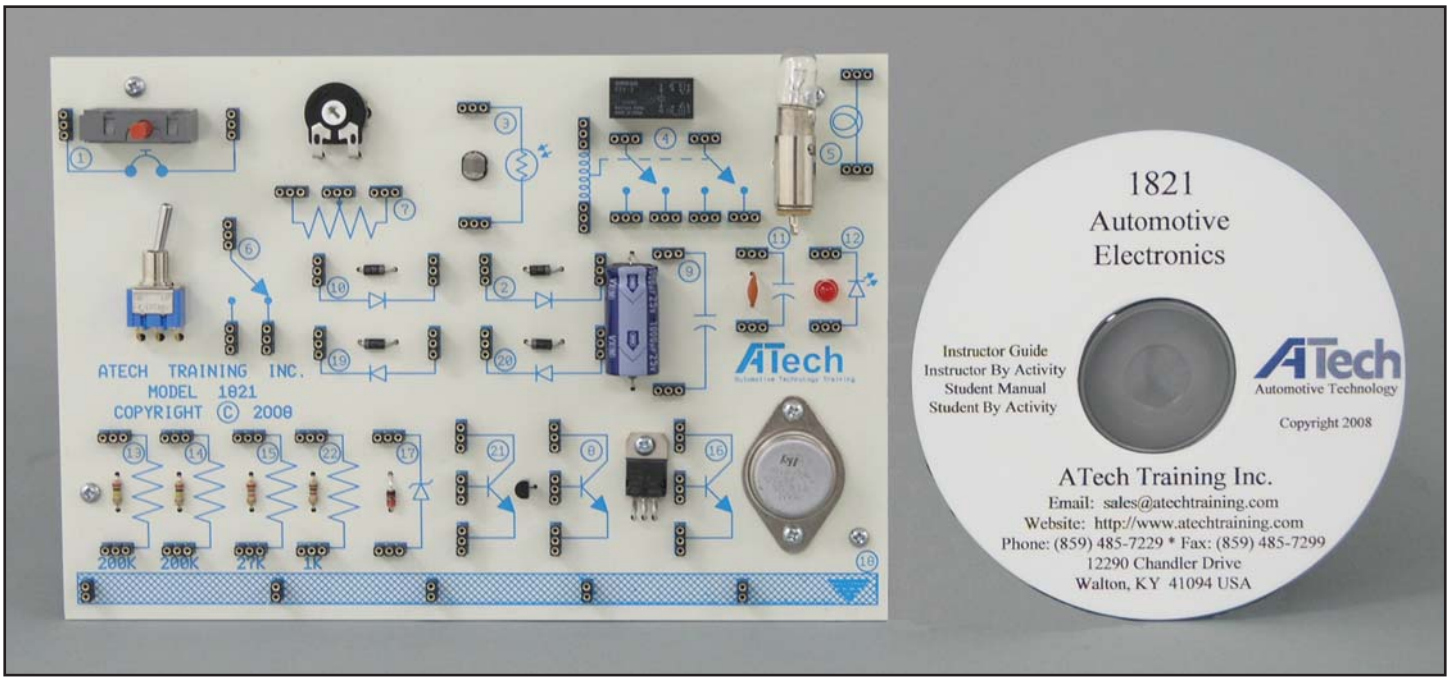
UNIT II- Electrical Behavior
- Series Circuits 1, 2, 3 and 4
- Parallel Circuits 1, 2, 3 and 4
- Series-Parallel Circuits 1, 2 and 3

UNIT III- Use of Troubleshooting Equipment/Automotive Circuits
- Trunk Release Circuit
- Horn Circuit
- Back Up Lamp Circuit
- Tail Light & Brake Light Circuit
- Starter Motor Circuit
- Turn Signal Circuit

UNIT IV- Use of Service Manual Schematics/Automotive Circuits
- Ignition Key Warning Circuit
- Electric Cooling Fan Circuit
- Brake Warning Circuit
- Heater Blower Circuit
- Headlight Circuit
- Dome Light Circuit

Electrical/Electronic Systems

Automotive Electronics Courseboard Model 1821



The Automotive Electronics Courseboard- Model 1821 is a hands-on study of basic automotive electronics that includes Courseboard and CD-ROM which contains the Student Manual and Instructor Guide. Also included in this courseware package is an on-site copy license to allow for reproduction of instructional materials for use in the classroom.

The Automotive Electronics Courseboard features real fixed components and wire terminals. 12-Volt power supply not included. Does not include fault insertion capability.

Activities Include:

UNIT I- Introduction to Electronics
- Electricity to Electronics
- The Digital Multi-Meter
- Why use a DMM?

UNIT II- Introduction to Semiconductors/Diodes
- Diode Behavior
- The Diode as a Rectifier
- The Light Emitting Diode (LED)
- The Clamping Diode
- The Zener Diode

UNIT III- Transistor Circuits
- The Transistor Circuit
- The Amplifier
- Transistor Troubleshooting
- Combining Transistors

UNIT IV- More Electronics
- The Capacitor
- The Photo Resistor
- Combined Electronics

ATech
Automotive Technology

For More Information:
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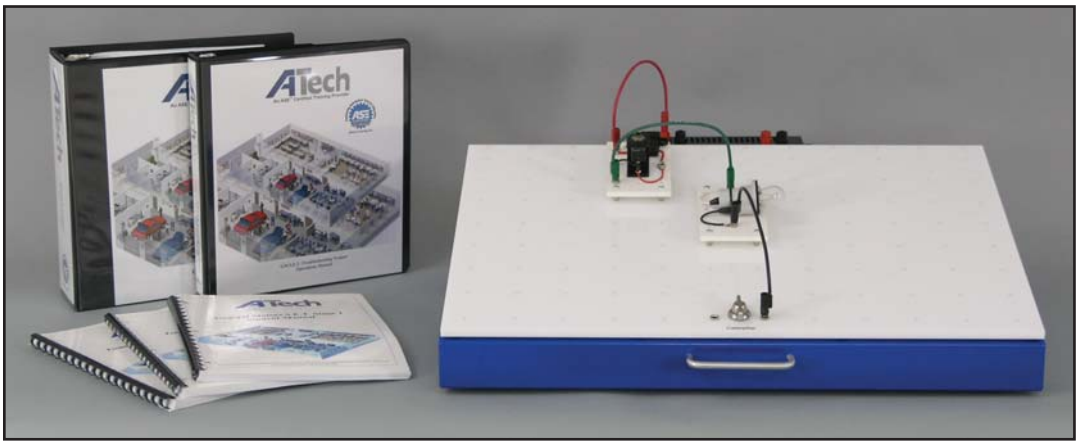
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

Electrical/Electronic Systems

"Factory Training Programs"

ATech was involved with the design and manufacturing of the electricity and electronic trainers currently used by General Motors, Chrysler, Ford, Nissan, Bosch, Honda and Volkswagen.



GM "Specialized Electronic Training" (S.E.T.) Program Model 18002TR

- The most widely used "OEM" Training System in the World
- Hardware design by ATech Training, Inc.
- Used by GM Training Centers and ASEP School
- Special configurations for John Deere, Caterpillar, Honda and VW
- Selected Vehicle Components
- 12-Volt and 5-Volt DC Power Supplies Included
- 12-Volt AC Power Supply Included
- Complete "Factory" Courseware Available

  - Instructor Guide- Model 18002IGB

  - Student Workbook- Model 18002SM

"I'm impressed with ATech's superior dedication to quality training. It clearly shows in both product design and customer service. General Motors is pleased!"

GM Service Technology Group

"This is the best automotive electronics training program anywhere!"

Automotive Technology Instructor
Wheeling High School
Wheeling, IL

Electrical/Electronic Systems

GM S.E.T. Troubleshooting Trainer Model 18002TT

Covers General Motors S.E.T. "Electrical/Electronics Stage 1, 2 and 3":

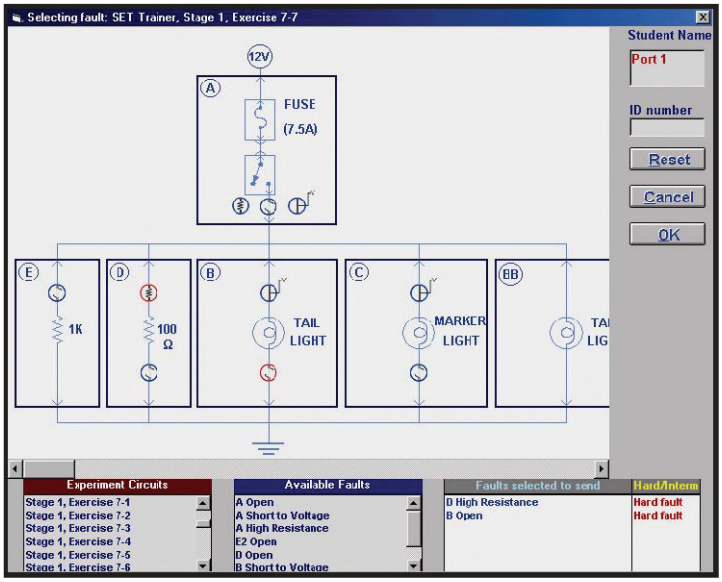
- Provided in locking suitcase for security and portability
- Includes components for all three stages and original GM "faulted" components
- Local and Network fault insertion
- Fault insertion selection by circuit number, "Experiment 3-2"
- Fault insertion selection by module
- Instructor can develop circuits and faults at component level
- Network display and storage of student's performance
- Compatible with ATech's Network System and IMP

Locking Suitcase

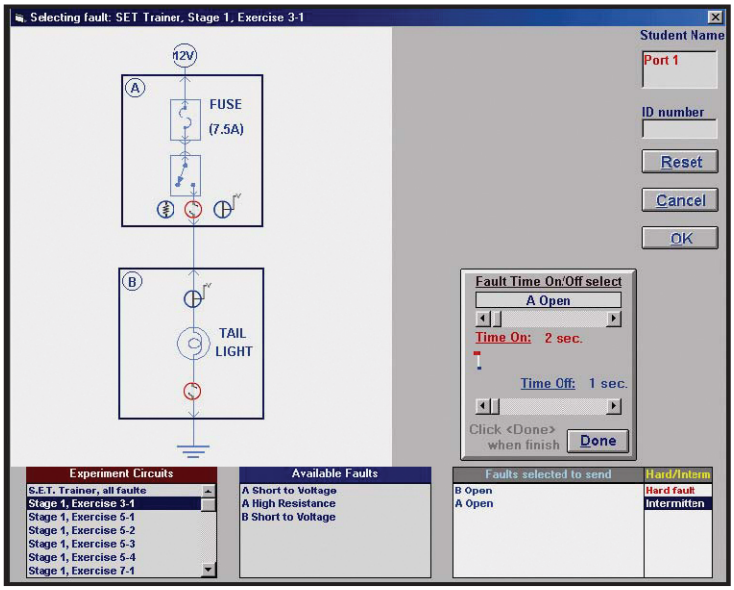
Electrical/Electronic Systems

GM S.E.T. Troubleshooting Trainer Continued

- Quick setup for "On the Road" Training
- Fault insertion in individual or all student stations from instructor's computer
- Up to 5 faults can be preselected for insertion
- Preselected faults will automatically be inserted in order of selection (when student completes one, next one is given)
- Instructor's computer displays student's answer, correct answer and stores results in student file



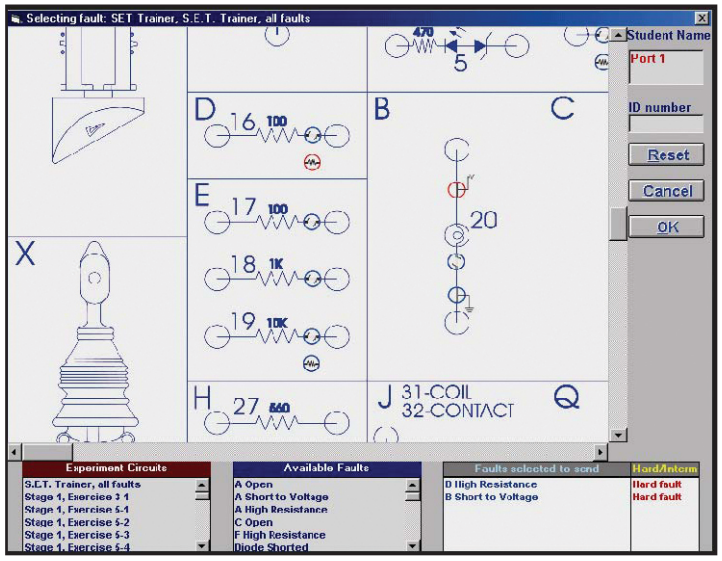
Fault Selection by S.E.T. Exercise Number



Intermittent Fault Time Adjustment

- ATech's copyrighted "Schematic Based Fault Insertion"
- Fault selection by S.E.T. Exercise Number
- Fault Selection from list or schematic indicator
- On screen indication of selected faults

- Intermittent fault "On" and "Off" time adjustments
- "Build Your Own Circuit" capability- Instructor can select from all faults
- Troubleshooting practice or Exam Mode capability
- Student results are saved in selection location



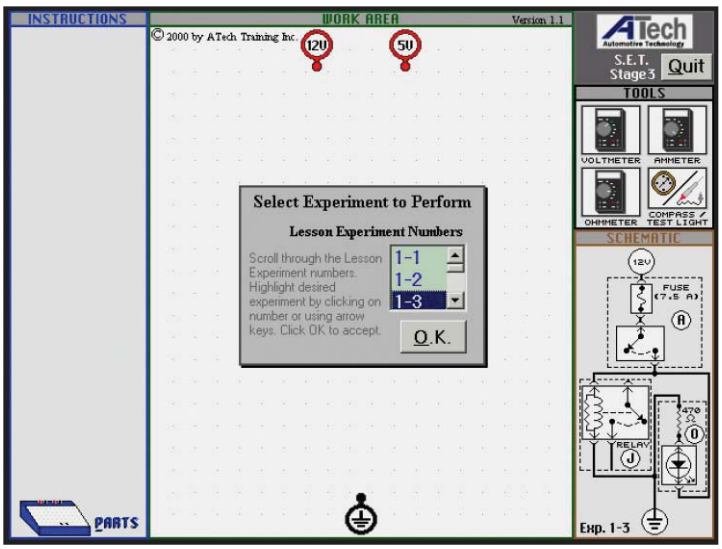
"Build Your Own Circuit" Fault Selection

Electrical/Electronic Systems

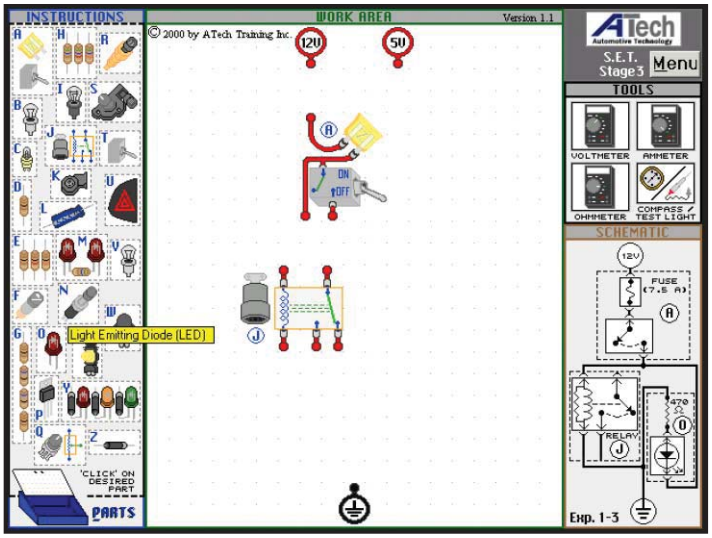
GM S.E.T. "Virtual" Trainer

This ATech software is a low cost Complement/Alternative to the GM S.E.T. project board. The program provides a virtual simulation of the GM S.E.T. Trainer and the instructional resources to perform the experiments from the GM "Electrical/Electronics" Stage 1, Stage 2 and Stage 3 courses.

- Experiment circuit illustrated in schematic
- Operational schematic, i.e. switch operates on both pictorial circuit and schematic
- Operational schematic ties components to symbols



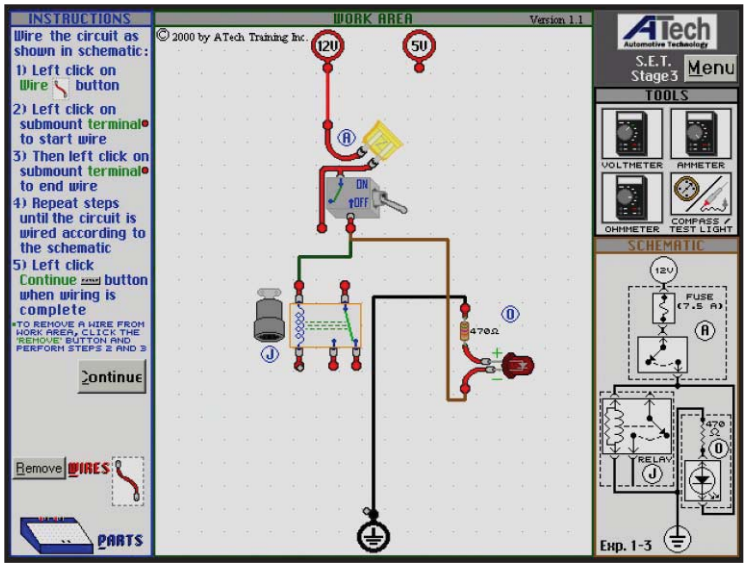
Circuit Selection by Experiment Number



Submount Selection and Placement

- Submount/component selection from pictorials and module numbers
- Submount/component interactive placement by selecting and dragging to position
- Software checks for accurate submount/component selection

- Interactive wiring of submounts
- Interactive relocation of wired submounts allows circuit reposition on breadboard
- Voltage measurements
- Resistance measurements
- Current measurements
- Simulated component operations


INSTRUCTIONS
Wire the circuit as shown in schematic:
1) Left click on Wire button
2) Left click on submount terminal to start wire
3) Then left click on submount terminal to end wire
4) Repeat steps until the circuit is wired according to the schematic
5) Left click Continue button when wiring is complete
*TO REMOVE A WIRE FROM WORK AREA, CLICK THE 'REMOVE' BUTTON AND PERFORM STEPS 2 AND 3
Continue
Remove WIRES
WORK AREA
Version 1.1
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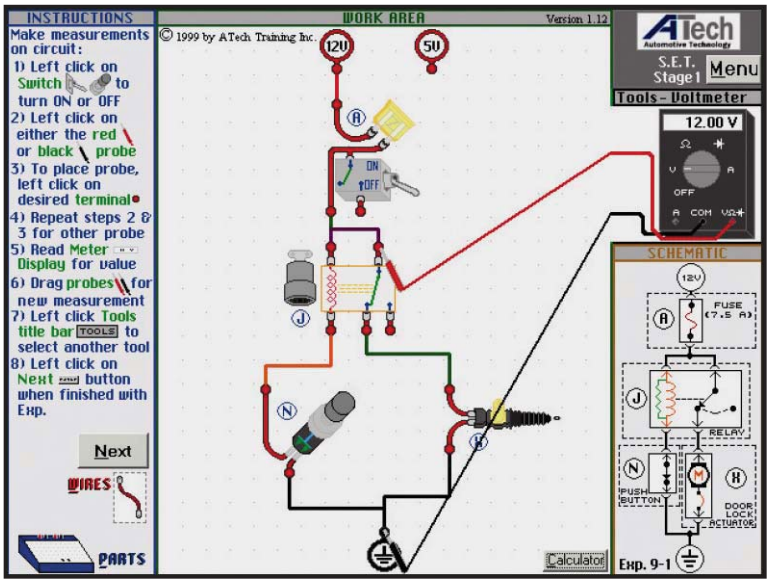
ATech
S.E.T. Stage 3
Menu
TOOLS
VOLTMETER
AMMETER
OHMMETER
COMPASS / TEST LIGHT
SCHEMATIC
PARTS
Exp. 1-3

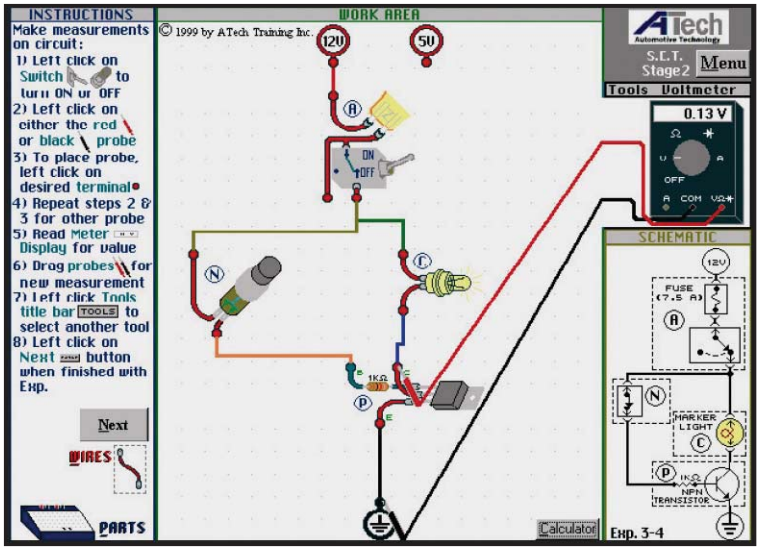
Interactive Wiring

Electrical/Electronic Systems



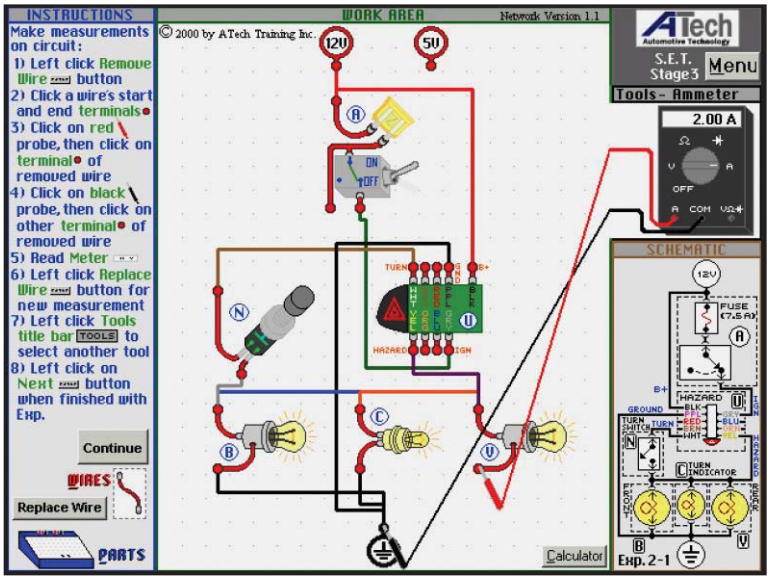
GM S.E.T. "Virtual" Trainer- Stage 1 Model 18002VT1

- Properties of Electricity
- Ohm's Law
- Series Circuits
- Parallel Circuits
- Series-Parallel Circuits
- Circuit Faults
- Electromagnetic Induction
- Network Version Available- Model 18002VT1N



GM S.E.T. "Virtual" Trainer- Stage 2 Model 18002VT2

- Automotive Electrical Components
- Solid State Components
- Vehicle Systems
- Network Version Available- Model 18002VT2N



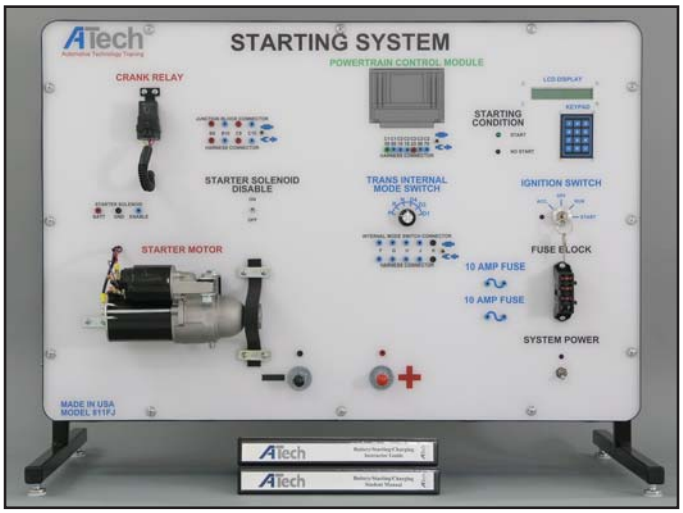
GM S.E.T. "Virtual" Trainer- Stage 3 Model 18002VT3

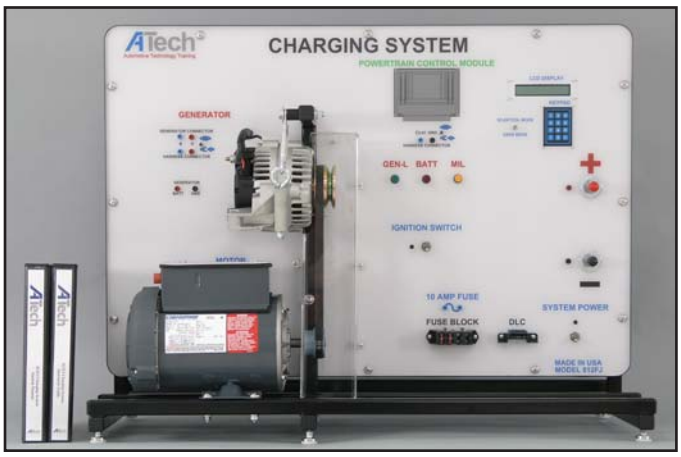
- Computers
- Sensor Inputs
- Actuator Outputs
- Series-Parallel Circuits
- Network Version Available- Model 18002VT3N

Electrical/Electronic Systems

Starting System Faulted
Model 811FJ

- New Components
- Factory Wire Colors
- Battery Posts (Battery NOT Included)
- Network/Manual Fault Insertion
- Courseware Included





Charging System Faulted
Model 812FJ

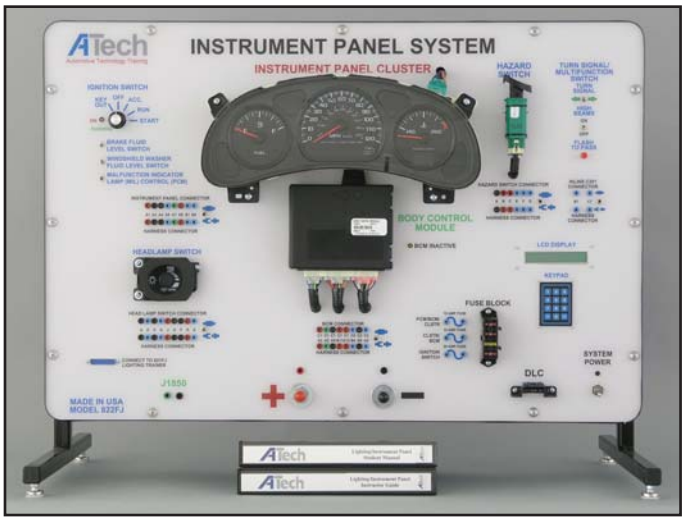
- New Components
- Compatible with Service Manual Procedures
- 1 1/2 HP Motor Drive
- Network/Manual Fault Insertion
- Battery Posts (Battery NOT Included)
- Courseware Included

Lighting System Faulted
Model 821FJ

- New Components
- "By-the-Book" Diagnostics
- Controlled by Body Control Module (BCM).
- Battery Posts (Battery or Power Supply NOT Included)
- Network/Manual Fault Insertion
- Courseware Included

** J1850 Bus- 822FJ/850FJ*

Electrical/Electronic Systems



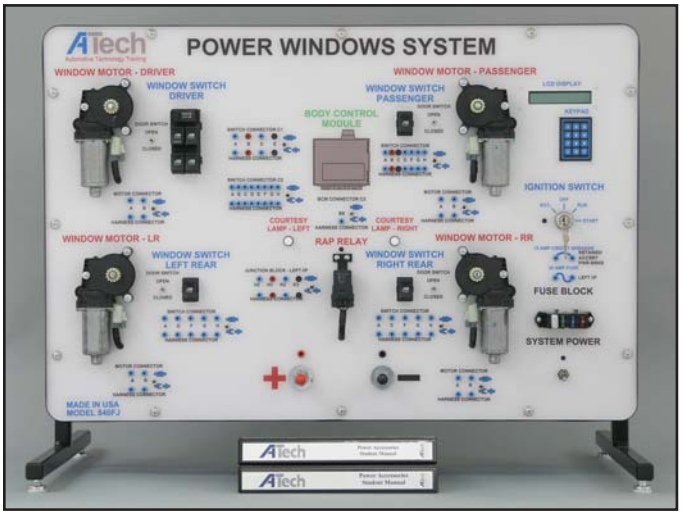
** J1850 Bus to 821FJ*

Instrument Panel System Faulted Model 822FJ

- Controlled by Body Control Module (BCM).
- New Components
- Operating Gauges, Indicators and Warning Devices
- Battery Posts (Battery or Power Supply NOT Included)
- Network/Manual Fault Insertion
- Courseware Included

Wiper/Washer System Faulted Model 830FJ

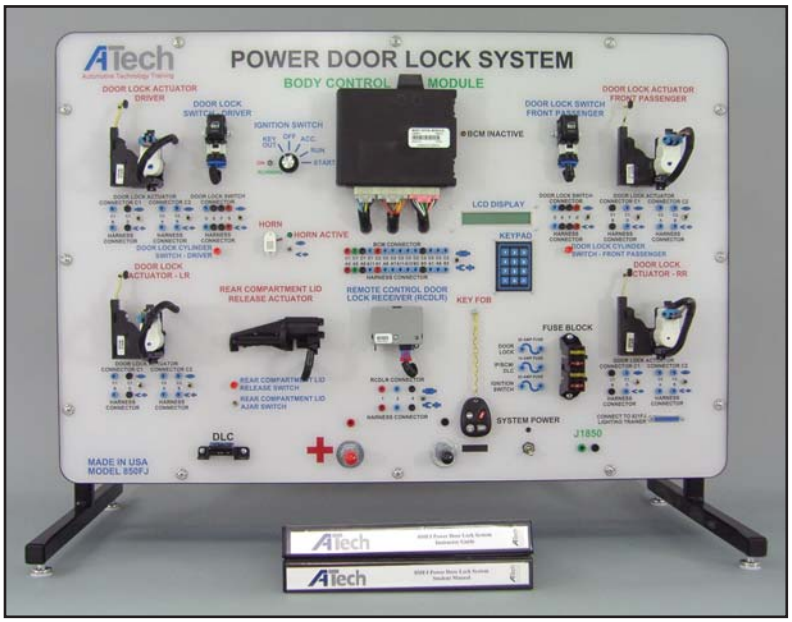
- New Components
- Intermittent Wiper/Washer Operation
- Compatible with Factory Wiring Diagrams
- Battery Posts (Battery or Power Supply NOT Included)
- Network/Manual Fault Insertion
- Courseware Included



Power Windows System Faulted Model 840FJ

- New Components
- Vehicle Wiring
- Service Manual Test Procedures
- Battery Posts (Battery or Power Supply NOT Included)
- Network/Manual Fault Insertion
- Courseware Included

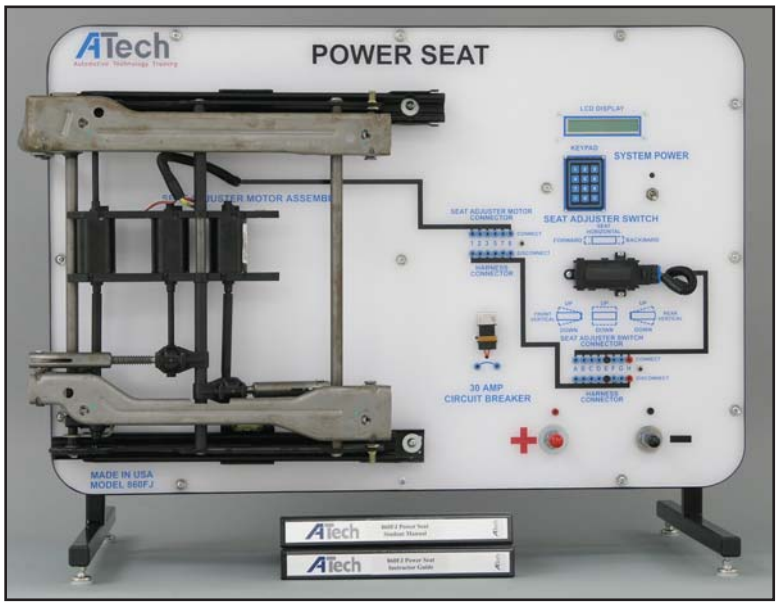
Electrical/Electronic Systems



** J1850 Bus to 821FJ*

Power Door Locks System Faulted Model 850FJ

- Controlled by Body Control Module (BCM).
- New Components
- Vehicle Wiring
- Service Manual Procedures
- Battery Posts (Battery or Power Supply NOT Included)
- Network/Manual Fault Insertion
- Courseware Included



Power Seat System Faulted Model 860FJ

- New Components
- Vehicle Wiring
- Service Manual Procedures
- Battery Posts (Battery or Power Supply NOT Included)
- Network/Manual Fault Insertion
- Courseware Included

For More Information:
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

Electrical/Electronic Systems

Student Response and Local Fault Insertion Panel

J1850 Network System Model 3801

The ATech J1850 Network System offers a "real world" look into the network operation of present day vehicles. The J1850 Network System can be connected to local networks for remote fault insertion.

Activities Include:

- Reading and Clearing DTCs
- Driver Information Center Warning Message Display
- Instrument Panel Cluster Response to J1850 Messaging
- Radio Module Response to J1850 Messaging
- Diagnostic Circuit Check
- Power Mode Test
- On-Star Operations
- Theater Lighting Effects
- Body Control Module Operation
- Remote Lock Operation
- Vehicle Speed Messaging
- Engine Temperature Messaging
- Fuel Level Messaging
- Gear Selection Messaging
- Reading all Module Parameter Identifications (PIDs)
- Scan Tool Output Operations
- J1850 Network Faults
- J1850 Network Electrical Troubleshooting

Faults:

- Data Buss Open Circuit
- Ignition Module Open Run Voltage
- Press-Lock Signal Open
- Module Data Buss Open
- Data Buss Short to Power
- DLC Buss Open Circuit
- Data Buss Short to Ground
- Data Buss High Resistance
- On-Star Keypad Power Open Circuit
- Loss of Module Power

ATech
Automotive Technology

Engine Performance

These trainers offer a “hands-on” study of OBD II technology, with complete powertrain control, OBD II monitors, new standard diagnostic features and performance of the trip/drive cycle.

NO OTHER CLASSROOM TRAINERS OFFER THESE FEATURES.

Toyota OBD II Fault Panel

Toyota OBD II System Model 2671/80*

- Engine and Transmission Control (EFI TCCS)
- Includes Ignition System
- Compatible with OBD II Scan Tools
- Performs Toyota OBD II Drive Cycle
- Enhanced Diagnostics with Code, No-Code, Ignition, OBD II and Transmission Faults
- Courseware Included

Student Response and Local Fault Insertion Panel

GM OBD II System Model 2652*

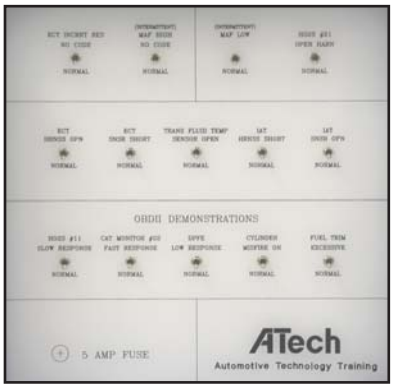
- Engine and Transmission Control
- Compatible with OBD II Scan Tools
- Performs GM OBD II Drive Cycle
- Enhanced Diagnostics with Code, Engine Protection and OBD II Faults
- Interface with Electronic Ignition (Model 1772)
- Courseware Included

*** Service Manuals NOT Included**

Engine Performance

These trainers offer a "hands-on" study of OBD II technology, with complete powertrain control, OBD II monitors, new standard diagnostic features and performance of the trip/drive cycle.

NO OTHER CLASSROOM TRAINERS OFFER THESE FEATURES.



EEC-V System Fault Panel

EEC-V System Model 1671/80*

- Developed with Ford
- Used in Ford Training Centers
- Compatible with OBD II Scan Tools
- Enhanced Diagnostics with Code, No-Code, OBD II and Intermittent Faults
- Interface with Ford EDIS-V (Model 1791F)

"...thank you for your company's participation in the development of the Automotive Electronics Course hardware and workstation exercises. Your company has met and exceeded our expectations in terms of quality, timing and confidentiality on all accounts."

Tech Training Program Manager,
Ford Customer Service

*** Service Manuals NOT Included**

ATech's Engine Performance programs are at the heart of ATech's business- just as these systems are the heart of today's automobiles.

Universal "On-Vehicle" Fault Insertion Model 2110

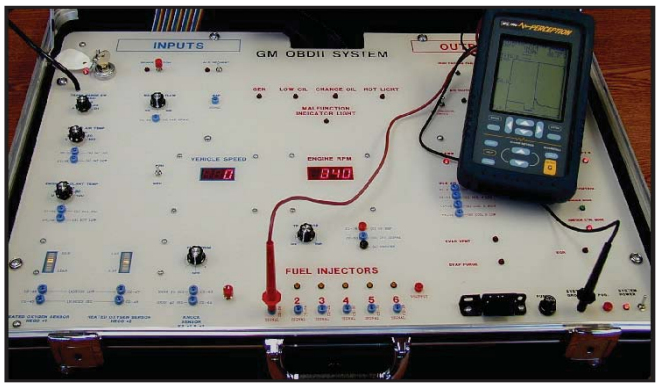
- Hard and Intermittent Faults
- Open/High Resistance/Short
- Optional Remote Control
- Low Cost

Engine Performance

Fault Panel

GM OBD II (Suitcase) Model 2651/60S*

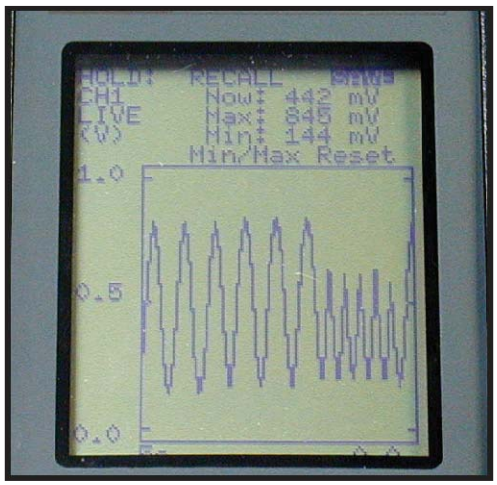
- Engine and Transmission Control
- Compatible with OBD II Scan Tools
- Enhanced Diagnostics with Code, Engine Protection and OBD II Faults
- Interface with Suitcase C³I Ignition (Model 1771SF)
- Courseware Included
- Trainer Size: 30 x 20 x 10 inches
- Trainer Weight: 40 pounds



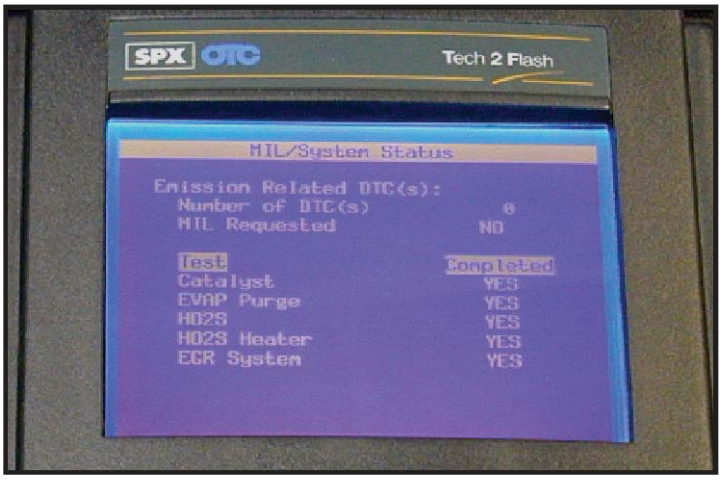
Fuel Injector Waveform Measurement

*** Diagnostic Equipment NOT Included**

Oxygen Sensors and Fuel Trim Control



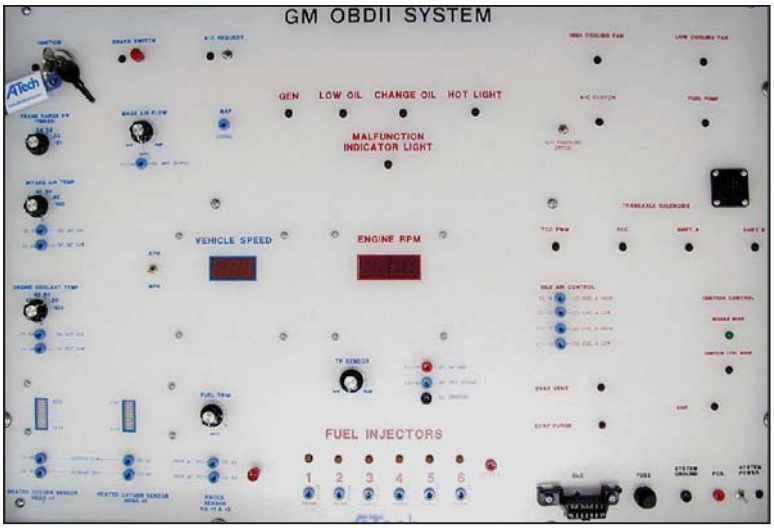
Fuel Control Oxygen Sensor Signal



OBD II Monitor Status

For More Information:
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com

Engine Performance



GM OBD II (Suitcase) Full Front Panel View

TRANSAXLE CONTROL:

- Realistic electronic control of shift solenoids
- Realistic up-shifting based on vehicle speed, gear selection and throttle position
- Realistic torque converter clutch solenoid operation including apply/release and rate control solenoids
- Downshift during full throttle
- Realistic manual downshifting
- Realistic coast-down downshift

OBD II DEMONSTRATIONS:

- Performs GM OBD II Drive Cycle
- Normal catalytic converter monitoring system operation
- Failed catalytic converter monitoring system operation
- Normal closed loop fuel control oxygen sensor operation
- Slow response rate fuel control oxygen sensor operation
- Normal oxygen sensor warm-up operation
- Normal oxygen sensor heater monitor operation
- Shift in A/T ratio control point
- Normal short term/long term fuel trim operation
- Normal EGR monitor operation
- No feedback EGR operation
- Type "A" CAT converter damage misfire
- Normal comprehensive component monitoring
- Selected failure of comprehensive component monitoring
- Normal evaporative system monitor operation
- Catalytic converter "warm-up" operation
- Catalytic converter "punch through" operation

ENGINE CONTROL:

- Actual emission control operation based on sensor inputs
- Actual sequential injector operation
- Flooded engine clearing during start-up
- RPM increase during A/C demand
- Knock retard of spark (observable on scan tool)
- Low temperature "choke" action
- Actual engine load operation
- High speed injector cut-out
- Fuel trim control
- Ignition control signals (C^3I Demonstrator)
- Ignition sensor signals (C^3I Demonstrator)
- Primary and secondary ignition (C^3I Demonstrator)

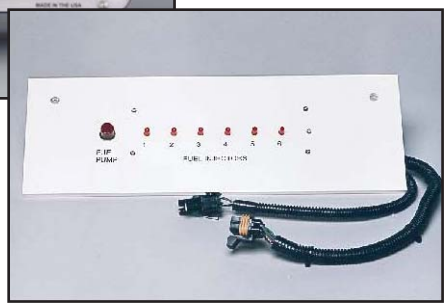
GM OBD II Trainer connected to C^3I Ignition Trainer

Engine Performance

Trainer Options

For More Information:
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

GM OBD II System (DRY)
Model 2652 DRY



Dry Panel Option

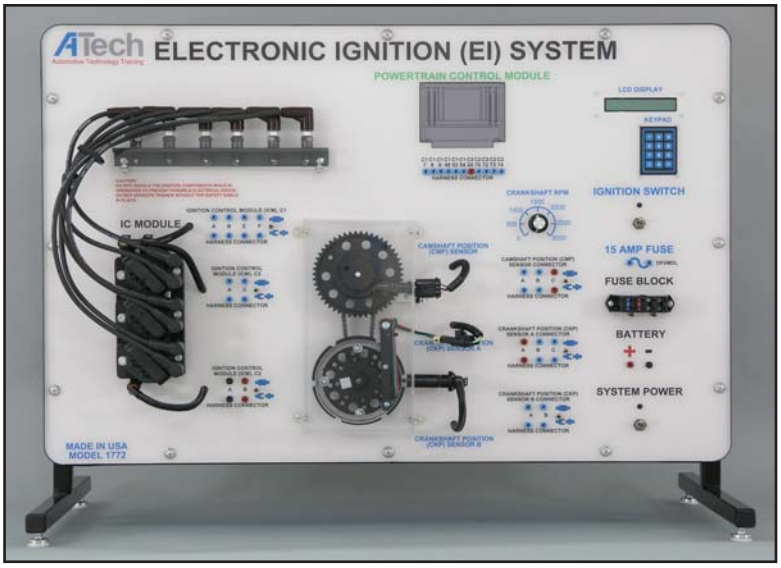
TRAINER OPTIONS:

- Optional Floor Model Legs Model TFM
- Fuel Injection and Ignition Trainer Interface: (Required for connection of ignition system to fuel injection trainer)
  - Ford EEC-V- Ford EDIS-V Cable (Model 1677)
  - GM OBD II- GM Electronic Ignition System Cable (Model 2657)
  - GM OBD II (Suitcase)- GM C^{3}I (Suitcase) Cable (Model 2657S)
- Dry Option: Simulated Fuel Injection/Pump
  - Toyota OBD II (Dry)- Model 2671/80 DRY
  - GM OBD II (Dry)- Model 2652 DRY
  - Ford EEC-V (Dry)- Model 1671/80 DRY

Engine Performance

Electronic Ignition (EI) System Faulted Model 1772

- Real World System Skills and Knowledge
- Live Component Operation
- Hall Effect Type System
- Probe Points for DMM or Oscilloscope
- Realistic Troubleshooting
- Interface with GM OBD II (Model 2652)
- Network/Local Fault Insertion
- Courseware Included



GM Computer Controlled Coil Ignition (C^3I) System Suitcase Faulted Model 1771SF

- Real World System Skills and Knowledge
- Live Component Operation
- Hall Effect Type System
- Probe Points for DMM or Oscilloscope
- Realistic Troubleshooting
- Interface with GM OBD II (Model 2652/60S)
- Courseware Included
- Trainer Size: 24 x 20 x 10 inches
- Trainer Weight: 40 pounds
- Network/Local Fault Insertion

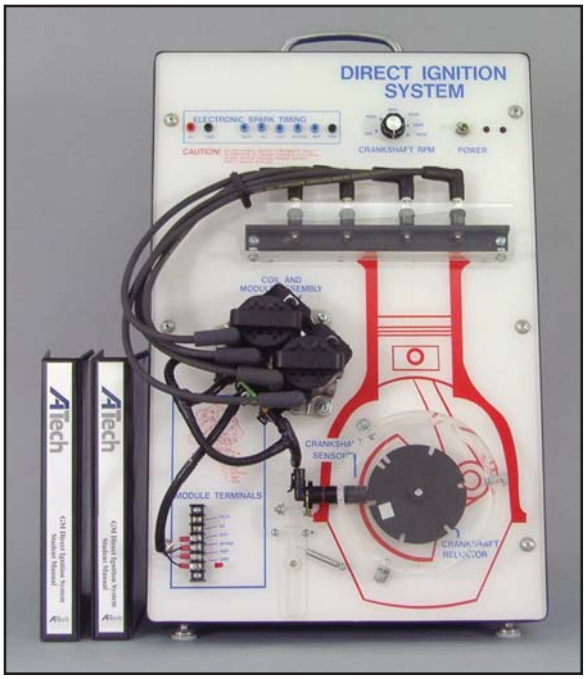
GM C^3I Suitcase Model 1771SF

GM OBD II Suitcase Trainer connected to
C^3I Ignition Suitcase Trainer

Engine Performance

Ford EDIS-V Ignition System Faulted Model 1791F

- Real World System Skills and Knowledge
- Live Component Operation
- Crank and Cam Sensors
- Probe Points for DMM or Oscilloscope
- Interface with Ford EEC-V (Model 1671/80)
- Courseware Included
- Network/Local Fault Insertion



GM Direct Ignition System Faulted Model 1711F

- Used by GM Training Centers
- Live Component Operation
- Magnetic Generator Sensor Type
- Realistic Troubleshooting
- Courseware Included
- Network/Local Fault Insertion

Injector/Fuel Pump System Model 670

- Realistic Fuel Pump Operation
- Realistic Fuel Injector Operation
- Adjustable RPM Control
- Digital RPM Readout
- Adjustable Engine “Load”
- Easy Injection Fuel Volume Measurement
- Adjustable Fuel Regulation Pressure
- 15 sec. Timer for Fuel Volume Measurement Incorporated into Trainer
- Automatic Operation in Timer Mode
- Fuel Pump Relay Control Circuit
- Injector Terminal Test Points
- Fuel Pump Terminal Test Points
- RPM Speeds from 200 to 5140
- Courseware Included

Engine Performance

Automotive Technology Trainer Model 600

- Newer Model “Recycled” Front Wheel Drive Vehicle
- Includes Engine Performance, Electrical/Electronic Systems, Suspension/Steering, Brakes, Heating/Air Conditioning and Transmission
- Real World System Skills and Knowledge
- “By-the-Book” Diagnostics
- Local Fault Insertion
- Courseware Available Model 605

For More Information:
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ATech Automotive Technology

Engine Performance

Evaporative Emission System Model 640

This ATech Trainer presents the live operation and study of a late-model General Motors Enhanced Evaporative Emissions (EVAP) System. The trainer will run the GM Service Bay EVAP Test using either it's built-in scan tool or a Tech 2. Realistic EVAP system faults, including system leaks, can be inserted via a built-in keypad, a local computer or via the optional ATech Network System (ANS) to give students troubleshooting practice. Students follow manufacturer's diagnostic procedures when troubleshooting system faults. Diagnosing system leaks is enhanced by the clear hoses when using a smoke machine. Tech2™ and Smoke Machine are NOT included with the trainer. Includes Courseware.

Activities Include:

- Description and operation of the EVAP system trainer
- Analyzing and interpreting schematics and manufacturer's troubleshooting and service procedures
- System diagnosing and troubleshooting
- Engine Off Natural Vacuum test demonstration

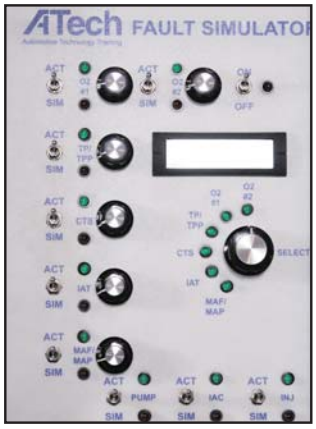
ATech
Automotive Technology

For More Information:
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com

Engine Performance

Engine Performance Trainer Model 650

- Newer Model "Recycled" Operational Engine
- Complete Emission Control System
- Network/Local Fault Insertion
- On-Trainer Breakout Box
- Instructor Guide and Student Manual Included
- Service Manual Optional



Fault Panel

"I've used ATech Trainers for years. Very satisfied always..."

Vale Technical Institute
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- Technical Education
- Industry and Education Partnerships
- Trade Updates
- OEM Training

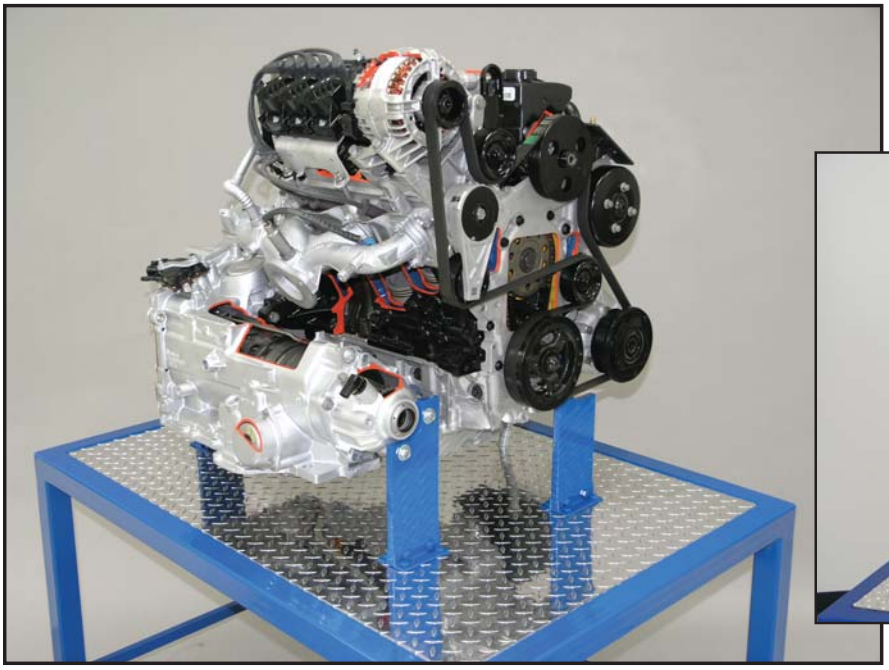
"I'd like to express my gratitude for all the assistance that your organization has provided. We have successfully installed the GM Virtual Trainers in our Automotive Computer Lab. This, of course, could not have been possible without the assistance of your staff. Our instructors love the product and have begun developing lesson plans to utilize the software this semester. We have seen a dramatic increase in the knowledge retention of our auto students since implementing a computer lab with automotive based software, and we look forward to enhancing their learning process with your products. Again, thank you for all your assistance through this matter"

Dept. of Information Technology
Trident Technical College

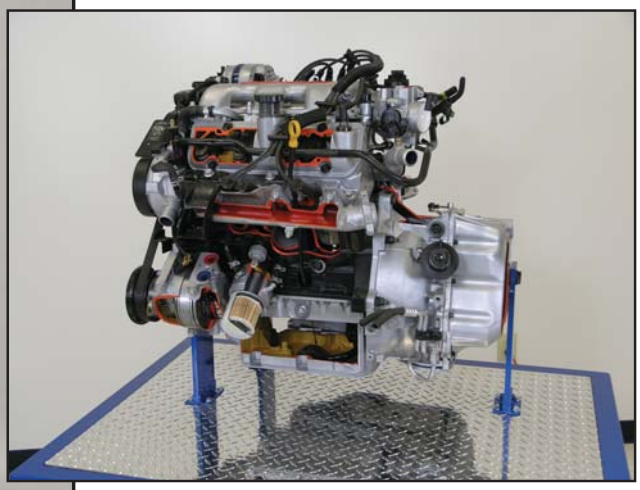
"ATech's support and assistance for our training center personnel have been superb. Instructors have commented as to the fast and on-target response of the ATech support staff. One other item must be mentioned- no other company has ever given Ford 10 years of warranty service on any product quality and their dedication to superior product support."

Ford Motor Company Training Director

Engine Performance



GM 6 Cylinder Cutaway
SIDE VIEW (Model 680)



GM 6 Cylinder Cutaway
Model 680

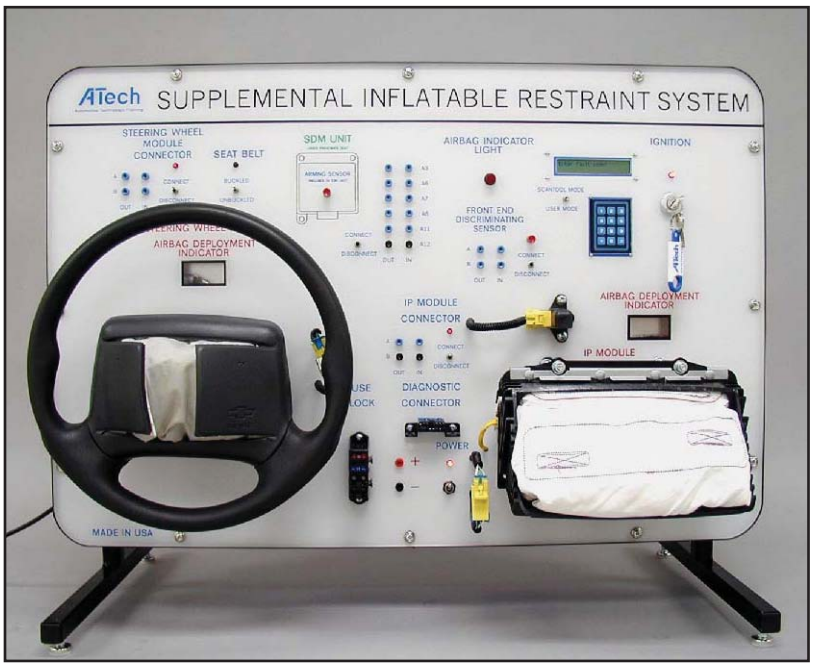
The Engine Cutaway Trainer (Model 680) is a fully functional OBD II engine, including ignition, fuel injection, cooling, and emission control systems. The engine rotates at a low RPM (using a small motor connected at the flywheel) to show complete engine operation. Presents the live operation and study of front wheel drive engines. A Reference Package is provided with service information specific to the Model 680 unit purchased.

The Engine Cutaway Trainer uses actual late model engine and transaxle.

Cutaway to view:

- Engine
- Cam Operations
- Crank Operations
- Oil Pick-up
- Oil Pump
- Coolant System
- Water Pump
- Power Steering Pump
- A/C Compressor
- EGR
- Throttle Body
- Timing Chain
- Intake Valve with Seat
- Exhaust Valve with Seat
- Valves
- Valve Springs
- Rocker Arms
- Push Rods
- Connecting Rods
- Pistons
- Rings
- Oil Filter
- Intake Manifold
- Exhaust Manifold
- Cylinder Walls
- Fuel Rail
- Ignition
- Transaxle
- Flywheel
- Torque Converter
- Valve Body
- Clutches
- Bands
- Band Servos
- Shift Interlock
- Output Speed Shaft
- VSS Sensor
- Transaxle Filter

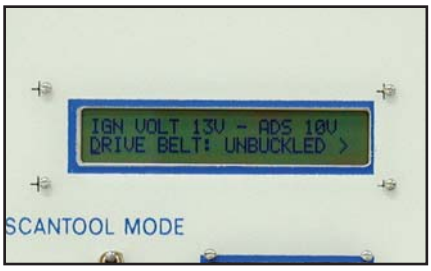
Suspension and Steering



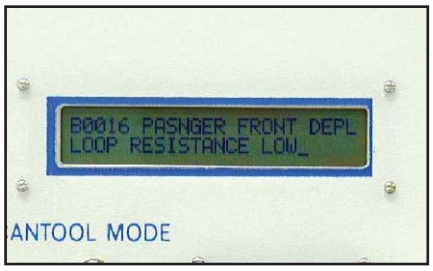
For safe operation the air bag module is a discharged unit.

GM SIR Dual Air Bag System Model 1551

- Actual Vehicle Components
- Air Bag Modules
- Air Bag Deployment Simulation
- Tech2™ Class 2 Data Bus
- Built-in Scan Tool function
- Air Bag System “self test” demonstration
- Network/Local Fault Insertion
- Courseware Included



Scan Tool Mode Data Readout



Scan Tool Mode Fault Readout

Tech2™ Connected to Training System

Tech2™ Module Information Readout

Suspension and Steering

Suspension and Steering System
Model 500

- "Recycled" Vehicle Components
- Includes Operating McPherson Struts, Rack and Pinion, and Power Steering
- On-Board Hydraulics Operate Suspension without Impairing Wheels
- Folding Steering Wheel and Casters for Easy Storage
- Powder-Coated Frame
- Courseware Included

"My new ATech Trainers are excellent teaching tools for student technicians...the units are user-friendly...the course materials and trainers have been designed so each person using this system can learn by doing. These trainers are a great help to me as a teacher to better manage student time. It works!"

Gulfcoast Community College
Gautier, MS

ATech
Automotive Technology

For More Information:
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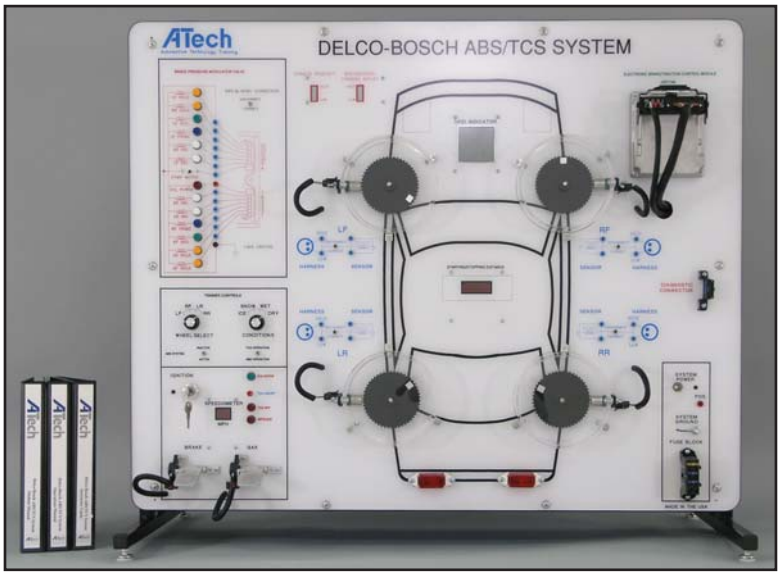
Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

Brakes

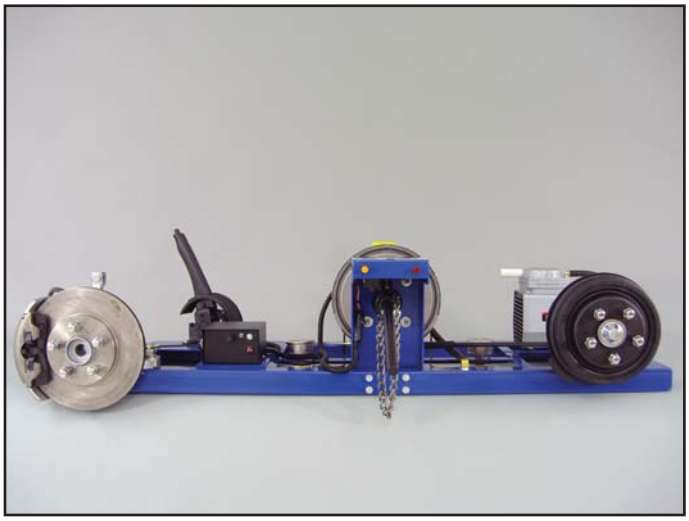


Delco-Bosch ABS/TCS System Model 1431/40

- Realistic Accelerator and Brake Pedal Operation
- Selection of "Controlled Wheel"
- Road Condition Select Dry, Wet, Snow or Ice
- Isolation of Antilock Mode from Traction Control Mode
- Interactive "Buss" Communications with Scan Tools
- Magnasteer™ Effort Indicator
- No "Resident" System Faults
- Fault Insertion
- Courseware Included

Drum/Disc Brake (4-Wheel) Model 400-4W

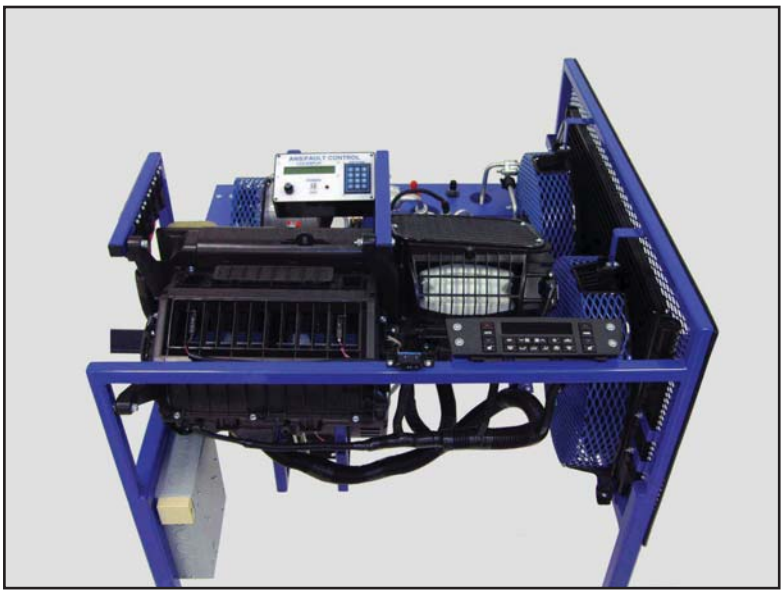
- "Recycled" Drum/Disc Brake
- Operating Hydraulic System
- Includes: Power Assist, Parking Brake, Electrical Circuits and Wheel Bearings
- Real World System Skills and Knowledge
- Powder-Coated Frame
- Courseware Included



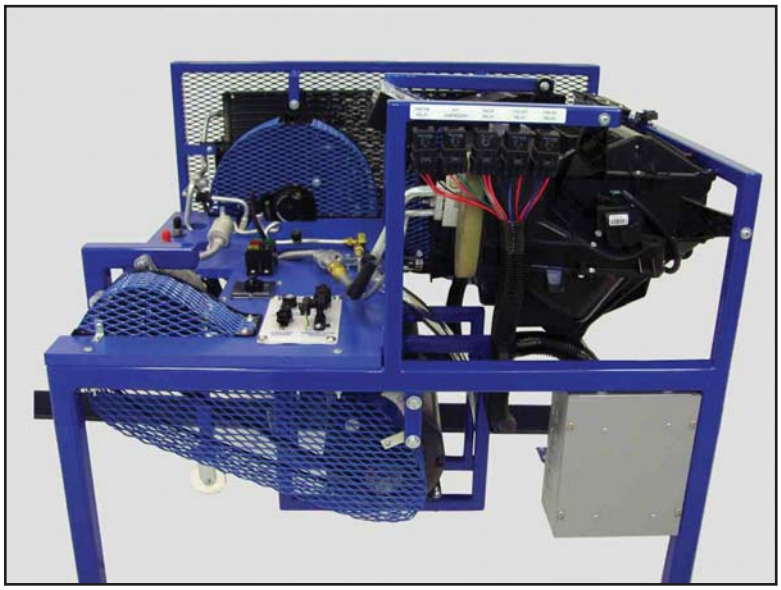
Drum/Disc Brake (2-Wheel) Model 400-2W

- "Recycled" Drum/Disc Brake
- Real World System Skills and Knowledge
- Powder-Coated Frame
- Courseware Included

Heating and Air Conditioning



Front View



Side View

Air Conditioning with Automatic Climate Control
Model 1351

- Functional R134A A/C System
- Electronic/Automatic Dual Zone Climate Control
- Includes Refrigerant/Vacuum Control and Electrical Faults
- 220V 5HP Motor and Vacuum Pump
- Powder-Coated Frame
- Courseware Included

ACTIVITIES INCLUDE:

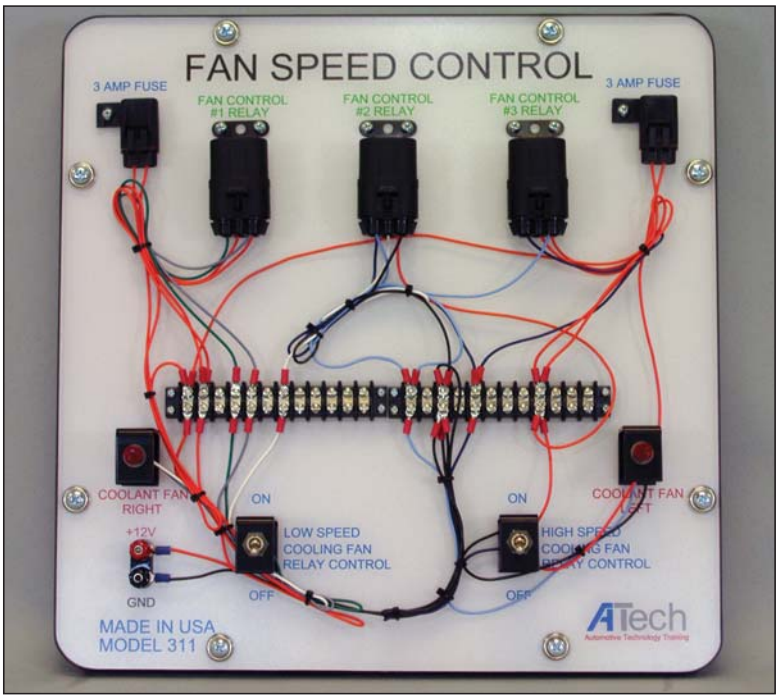
- Network Faulting
- Principals of Refrigeration
- Basic Refrigerant Cycle
- Compressors & Control Components
- Condenser and Evaporator
- Receiver Dryer/Accumulator
- Metering components
- Safety Precautions & Environmental Concerns
- Refrigerant System Tests
- Leak Detection
- Refrigerant System Recovery, Recycling & Recharging
- Cooling Fan Operation
- Cooling Fan Diagnosis
- Air Distribution Overview
- Air Distribution Controls
- Strategy Based Diagnosis

Cooling Fan Faulted
Model 310F

Blower Motor Faulted
Model 320F

- New Model Operating Components
- "By-the-Book" Diagnostics
- Battery or Power Supply NOT Included
- Network/Local Fault Insertion
- Courseware Included

Heating and Air Conditioning

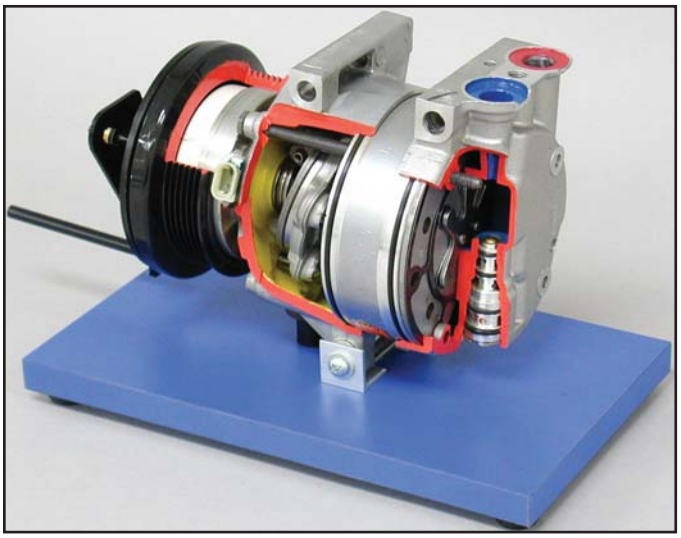


Fan Speed Control Trainer
Model 311

This ATech Trainer presents the hands-on construction, study and live operation of a modern Fan Speed Control System as found on late-model General Motors vehicles. Students follow printed schematics to wire up either a single-speed single fan system or a two-speed two fan system. The trainer circuits use the same wire colors as the manufacturer's wiring diagram. Incandescent bulbs are substituted in place of the actual cooling fan motors for safety purposes.

ACTIVITIES INCLUDE:

- Cooling Fan Speed Control Operation
- Electrical Troubleshooting
- Reading, Analyzing and Interpreting a Wiring Diagram
- Relay and Series-Parallel Circuit Operation



A/C Compressor Cutaway
Model 381

The A/C Compressor Cutaway (Model 381) is a V5 Variable Displacement A/C Compressor. It includes a hand crank to rotate the compressor. The compressor is sectioned to show internal components and is mounted to provide stable display and use.

ATech
Automotive Technology

For More Information:
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E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

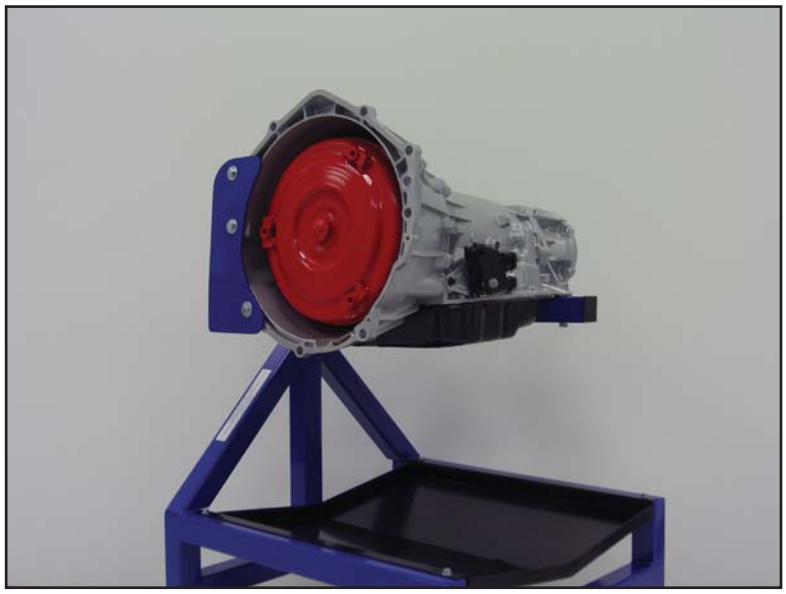
Automatic Transmission/Transaxle

Electronic Automatic Transaxle Rebuild Model 1210

- "Recycled" Transaxle
- Rotating Rebuild Stand with Component Storage and Drain Pan
- Powder-Coated Frame
- NATEF Record Keeping Sheets, Reference Books, Service Manual(s) Available- Model 1215

Electronic Automatic Transmission Rebuild Model 1220

- "Recycled" Transmission
- Rotating Rebuild Stand with Component Storage and Drain Pan
- NATEF Record Keeping Sheets, Reference Books, service Manual(s) Available- Model 1225



"ATech is extremely professional with creative presentations... [and] is commended for originating the ASE/ NATEF Student Record-Keeping Shareware... This effort is just another example of their professionalism and sincere interest in quality trained technicians."

Rock Valley College
Rockford, IL

"During the 'Train the Trainer' program for the LX5, many of the instructors were curious as to how ATech could make the trainer operate so realistically. Subsequently, the back was removed to view the internal components. The group was amazed. This trainer is, without a doubt, the most professionally designed and constructed trainer GM has ever had built." GM 3.5 Liter- LX5 Ignition

General Motors
Training Center Director

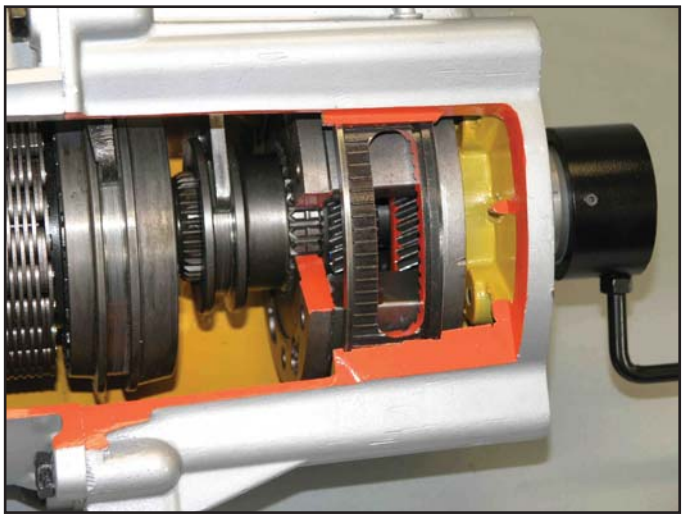
Automatic Transmission/Transaxle

Transfer Case Cutaway Trainer
(Showing Planetary Gear System) Model 1230

The Transfer Case Cutaway Trainer presents the viewing and operation of a Transfer Case. It provides hands-on experience to complete NATEF Tasks.

Features:

- Actual late-model transfer case
- Case cutaway painted to enhance viewing
- Handle allows rotation of gears
- Mounted on a powder-coated metal stand



Transfer Case (High Range Position)
CLOSE-UP (Model 1230)

For More Information:
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

ATech
Automotive Technology

Manual Drive Train and Axles

Manual Transaxle Rebuild
Model 110

- "Recycled" Transmission or Transaxle with Clutch
- Rotating Rebuild Stand with Component Storage and Drain Pan
- NATEF Record Keeping Sheets, Reference Books, Service Manual(s) Available- Model 115

Rear Axle Cutaway
Model 120

- "Recycled" Rear Axle Assembly
- Mobile Stand
- Powder-Coated Frame
- NATEF Record Keeping Sheets, Reference Books, Service Manual(s) Available- Model 125

For More Information:
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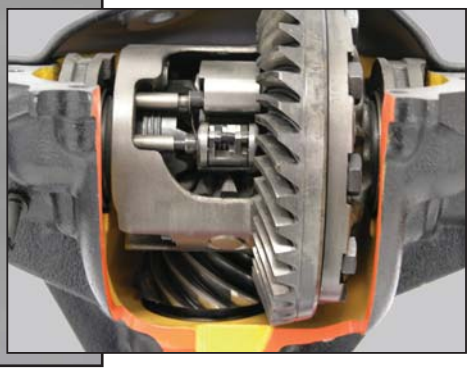
Manual Drive Train and Axles

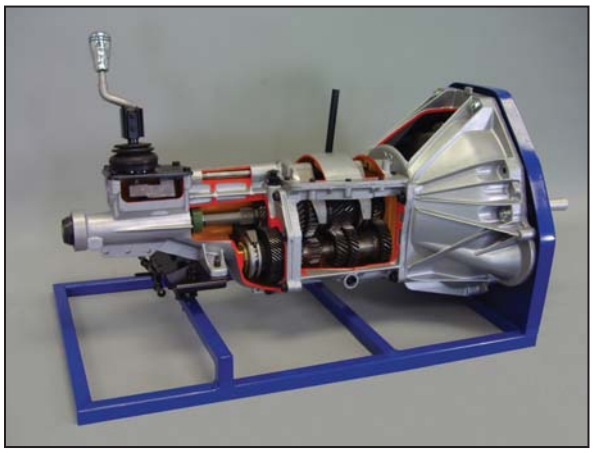
Rear Axle Limited Slip Differential Cutaway Model 126



- GM Complete Differential/Axle
- Eaton Limited-Slip Traction Control System
- Carrier and Pinion Areas Cutaway for Easier Viewing/Instruction
- All frame surfaces Powder-Coated for Durability and easy Identification
- Includes Casters to Simplify Movement

Manual Transmission (RWD) Cutaway Model 130

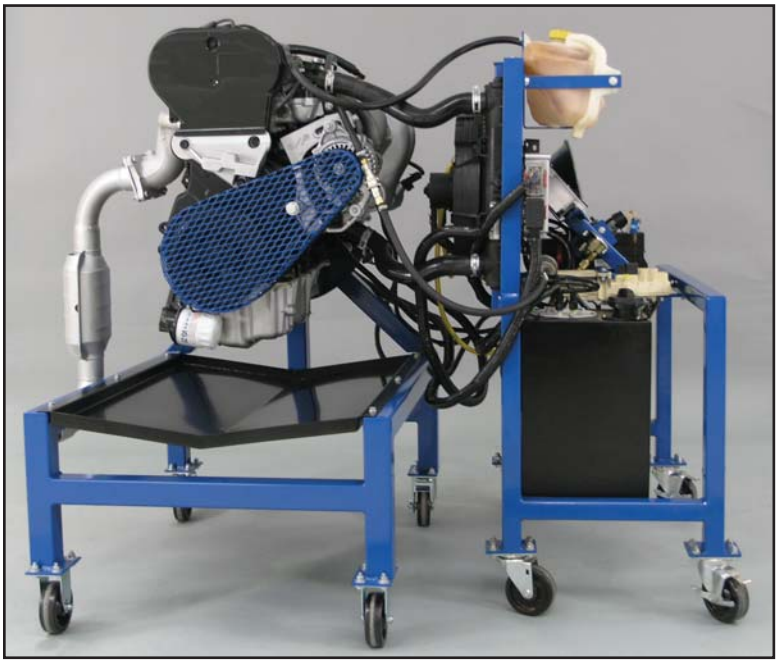
- Operating Clutch and Hand Crank
- "Recycled" Transmission
- NATEF Record Keeping Sheets, Reference Books, Service Manual(s) Available-Model 135



Manual Transaxle Cutaway Model 140

- "Recycled" late-model manual transaxle complete with clutch assembly and gear shift
- Includes handles to operate clutch and rotate gear shifts
- Cutaway to show internal components
- Mounted to provide stable display and use on a powder-coated frame
- Available as a Ford Focus 5 speed MT

Engine Repair



Engine Repair
Model 90/91

- "Recycled" Engine with Rotating Rebuild Stand- Model 90
- "Start Cart" with necessary components to start engines- Model 91
- NATEF Record Keeping Sheets, Reference Books, Service Manual(s) Available- Model 95

For More Information:
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com

Automotive/Education Industry Proven

In addition to ATech's on-going support of public and private education, we work very closely with the automotive industry. Our users include:

AC Delco
Allied Signal
American Honda Motor Company
Atlanta Metro (MARTA)
Automatic Transmission Rebuilders
AVIS Rental Car Company
B & B Electronics
Bridgestone/Firestone
Briggs-Weaver
Canadian Military Forces
Caterpillar
Chinese Automobile Company
Cincinnati Metro (SORTA)
Correctional Facilities
CT Transit
Chysler
Delphi Delco Electronic System
Egyptian Air Force
Federal Mogul/Champion Spark Plug
Ferrari
Ferret Instruments
Ford Motor Company
General Motors
Georgia Power
Goodyear Tire and Rubber
Hyundai Motor America
Job Corps Centers
John Deere Corp.
Kentucky DOT
Lincoln Technical Institute
L.J. Technical Systems
Maserati
Mazda Automotive Corp.
Melior Institute
Mercedes-Benz Institute
Mitsubishi Automotive Co.
Motorola Semi-Conductor Division
Navistar
Nissan
No Lemon
OTC
Pennsylvania DOT
Pierce Transit
Porsche
Quaker State of Mexico
Robert Bosch Corp.
Royal Guard Oman
Santa Clara Valley Transit
Snap-On Tools
SPX
Standard Motor Products
Sun Tran
United States Air Force
United States Army
United States Government
United States Navy Research
United States Postal Service
Universal Technical Institute
VazMotor Company (Russia)
Volkswagen
Volvo
Wyotech
and many more...

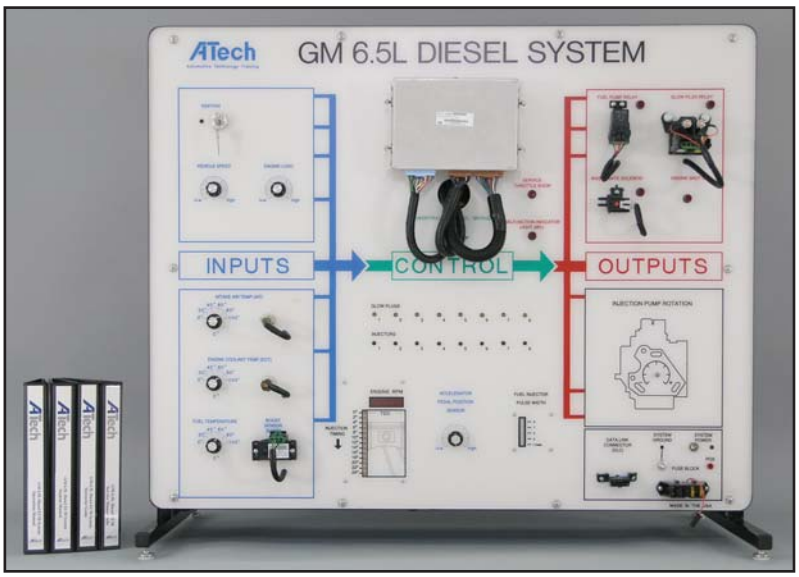
Diesel Engine Performance
Medium/Heavy Duty Truck

GM 6.5L Diesel Injection Pump System
Model 6601

- Actual Fuel Injector Pump Operation
- Variable Control of Injection Timing
- Variable Control of Engine Load
- Visible Individual Fuel Injector Output
- Stanadyne Rotary Injection Pump
- Allows for Speeds from 0 to 2500 RPM
- Courseware Included

GM 6.5L Diesel ECM System
Model 6611

- Injected Fuel Volume Based on Sensor Inputs
- Variable Control of Engine RPM
- Variable Control of Engine Load
- Variable Control of Engine Coolant Temperature
- Variable Control of Engine Air Temperature
- Variable Control of Fuel Temperature
- Visible Bar Graph Display of Fuel Injection Pulse Width
- Visible Bar Graph Display of Fuel Injection Timing
- Performs Pump TDC Adjustment Procedure
- Interaction with Standard Scan Tools for DTCs and Engine Parameters
- Courseware Included



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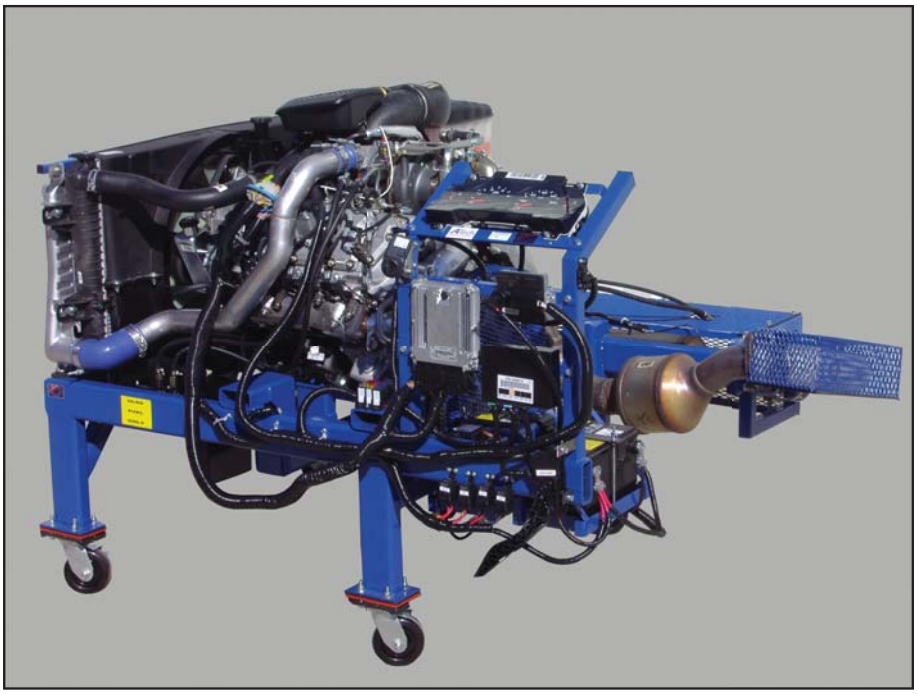
Web Site: www.atechtraining.com

ATech
Automotive Technology

Diesel Engine Performance

Diesel Engine Performance Trainer Model 650D



Features

- New or Remanufactured Running Engine
- Powder-Coated Stand
- Heavy Duty Casters
- Vibration Control Engine Mounting
- Radiator Cooling System with Expansion Tank
- Turbo Intercooler
- Clutch Drive Fan with Belt and Pulleys
- Instrument Panel
- Throttle Control
- Diesel Particulate Filter
- Charging System
- Starting System
- Battery
- Fuel Cell
- Electronic Control Module
- Electronic Data Link

Contact ATech Training, Inc. for Engine Availability.
Phone: 859-485-7229
Fax: 859-485-7299
E-mail: sales@atechtraining.com
Web Site: www.atechtraining.com

Diesel Engine Performance

Diesel Technology Trainer Model 600D

The Diesel Technology Trainer (Model 600D) presents the live operation and study of the late model diesel pickup truck. It provides an advanced level of instruction by duplicating actual on-vehicle troubleshooting procedures. Requires 12VDC automotive battery (included).

Features:

- Diesel Particulate Filter System (DPF)
- Has a fully functional engine, transmission, front brake system (rear lines are sealed), steering system, suspension system, fuel injection system, glow plug system, emission control, instrument panel, front and rear lighting system, and a air conditioning system
- Simulator/Fault Insertion Box for inserting realistic faults into the system
- Compatible with actual service manual test procedures
- Performs DPF regeneration with scan tool
- Portable via rolling casters

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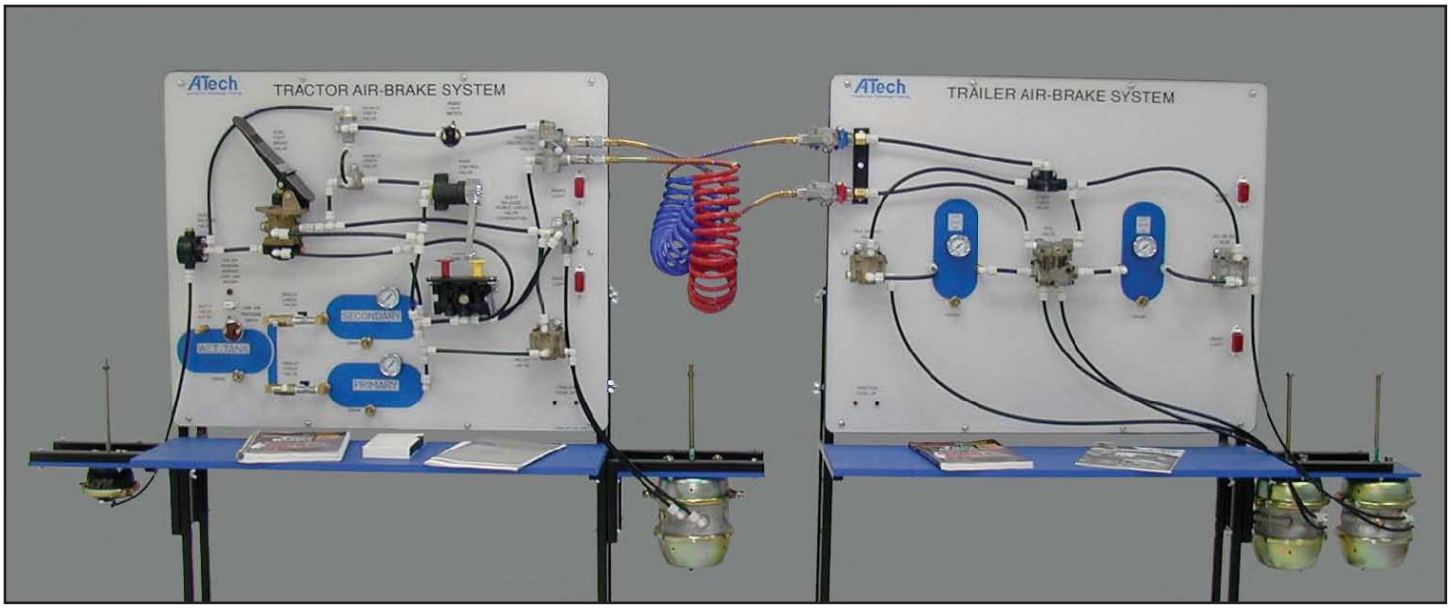
Web Site: www.atechtraining.com

ATech
Automotive Technology

Air Brakes
Medium/Heavy Duty Truck



Tractor (Model 6410) and Trailer (Model 6420) Air Brake System Trainers

AIR BRAKE COMPONENTS INCLUDE:

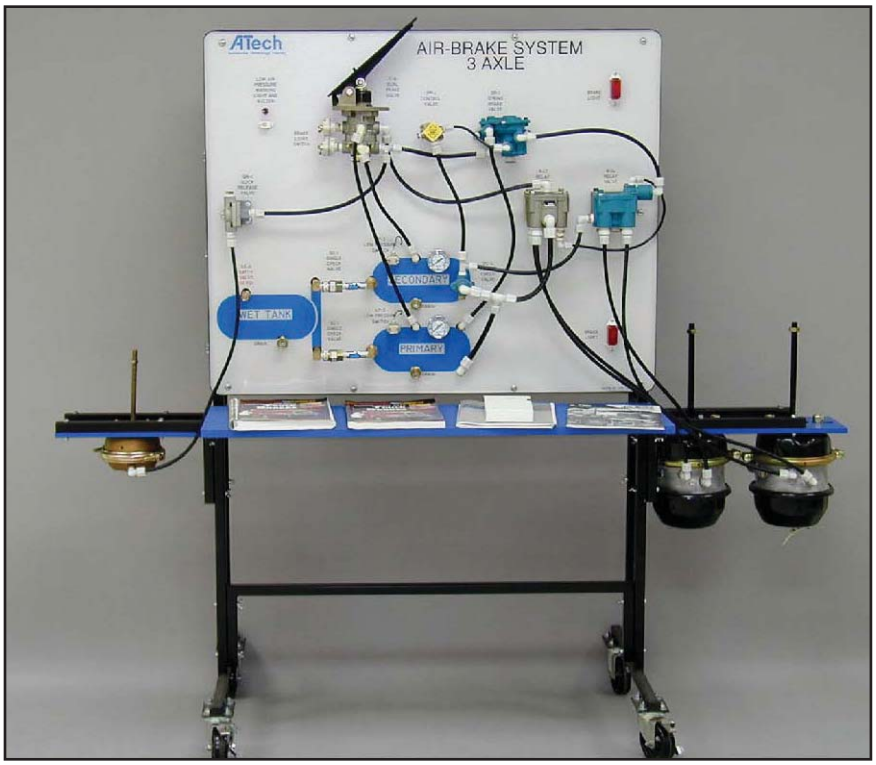
- Low Pressure Warning Light and Buzzer
- Safety Valve
- Single Check Valves
- Brake Light Switch
- Double Check Valve
- Control Valve
- Relay Valve
- Spring Brake
- Tractor Protection Valve
- Service and Emergency Glad Hands
- RT2 Valve
- Quick Release and Double Check Valve Combination
- Low Pressure Indicator Switch
- Drain Valves- Manual
- Air Gauge
- Quick Release Valve
- Dual System Foot Brake Valve
- Spring Brake Valve
- Hand Control Valve
- Service Brake Chamber
- Manifold Dash Valve
- RT4 Valve
- D.O.T. Air Brake Lines

The ATech Air Brake Training System allows System Demonstrations of:

- Compressor Failure
- Secondary Tank Failure
- Park Brake Apply and Release
- Tractor to Trailer Hook-up
- Primary Tank Failure
- Normal Brake Operation
- Trailer Braking (Hand Control Valve)
- Trailer Air Supply and Evacuate

The ATech Air Brake Training Systems are complete programs for presenting the “real world” operation and study of Three Axle and Tractor- Trailer Air Brake Systems. The trainers demonstrate FMVSS 121 Air Brake Systems.
Courseware includes Shop Manuals, Instructor’s Guide, Classroom Manual, Components Maintenance Trouble-shooting Handbook, and Videos. NATEF Task Record Keeping Sheets are included with the courseware to assist the instructor in recording the progress of each student as NATEF tasks are completed.

Air Brakes
Medium/Heavy Duty Truck



Three Axle Air Brake System Trainer
Model 6430

The ATech Air Brake Training System allows System Demonstrations of:

- Compressor Failure
- Primary Tank Failure
- Secondary Tank Failure
- Normal Brake Operation
- Park Brake Apply and Release

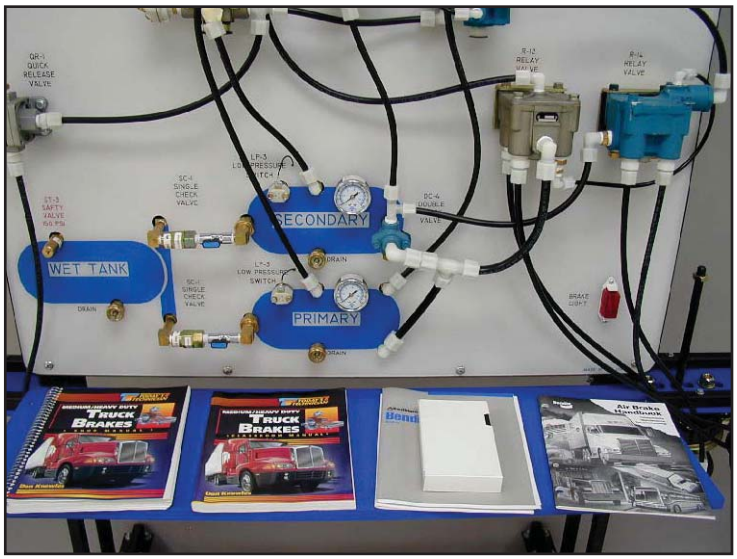
COURSEWARE INCLUDED:

- Medium/Heavy Duty Truck Brake Classroom Manual
- Medium/Heavy Duty Truck Brake Shop Manual
- Medium/Heavy Duty Truck Brake Instructor's Guide
- Dual Circuit Brake System Troubleshooting Manual
- Air Brake Systems Video
- Air Brake Systems Video Training Workbook
- Air Brake Systems Video Training Handout
- Air Brake Components Maintenance Trouble-shooting Handbook

AIR BRAKE COMPONENTS:

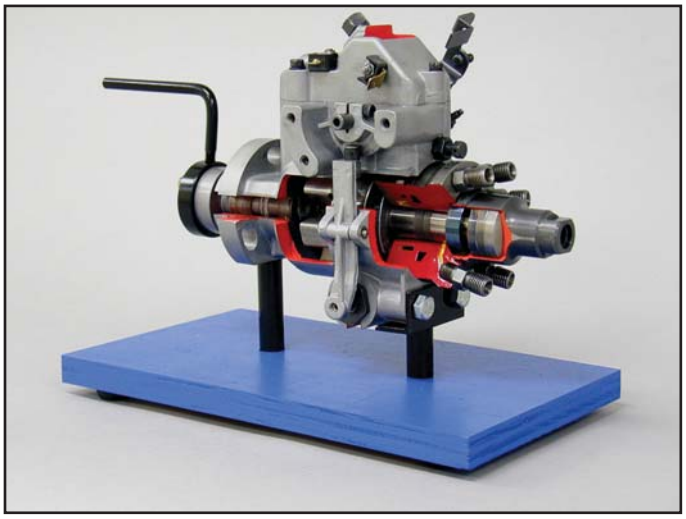
- Low Pressure Warning Light/Buzzer
- Low Pressure Indicator Switch
- Safety Valve
- Drain Valves- Manual
- Single Check Valves
- Air Gauge
- Brake Light Switch
- Quick Release Valve
- Double Check Valve
- Dual System Foot Brake Valve
- Control Valve
- Spring Brake Valve
- R12 Relay Valve
- R14 Relay Valve
- Spring Brake
- Service Brake Chamber

The Training System needs an external compressed air supply of 90 to 140 PSI and a standard 110 VAC electrical supply.

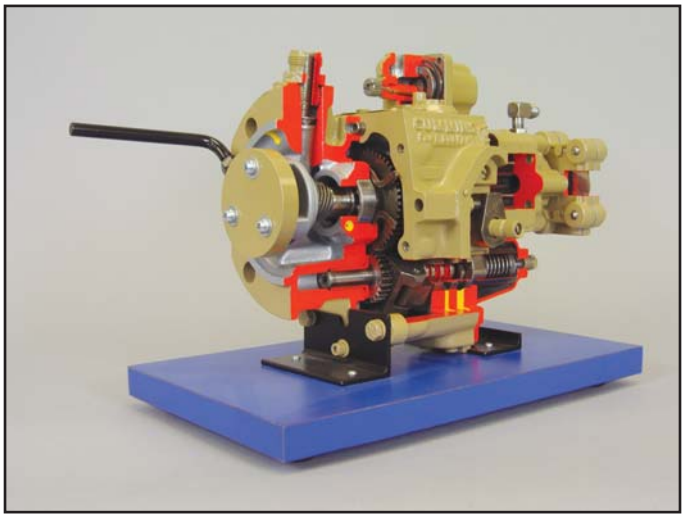


Air Brake Training System Courseware

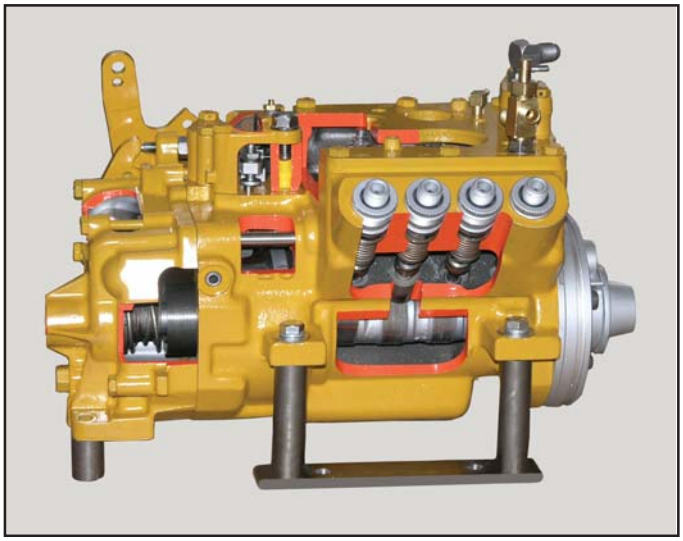
Diesel Cutaways



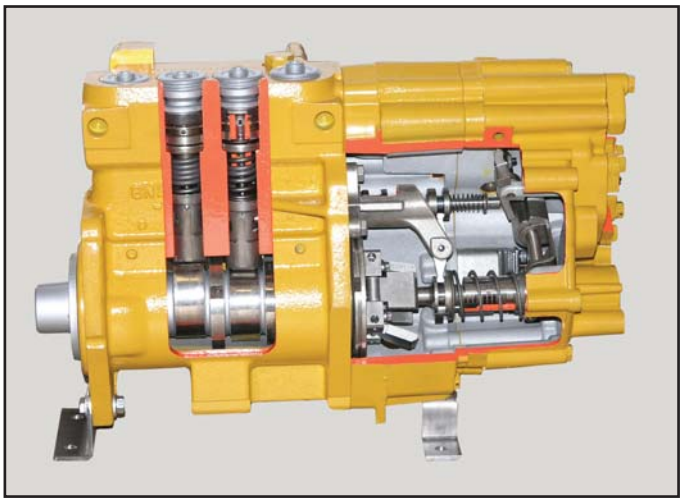
Standyne Diesel Pump
Model 6681



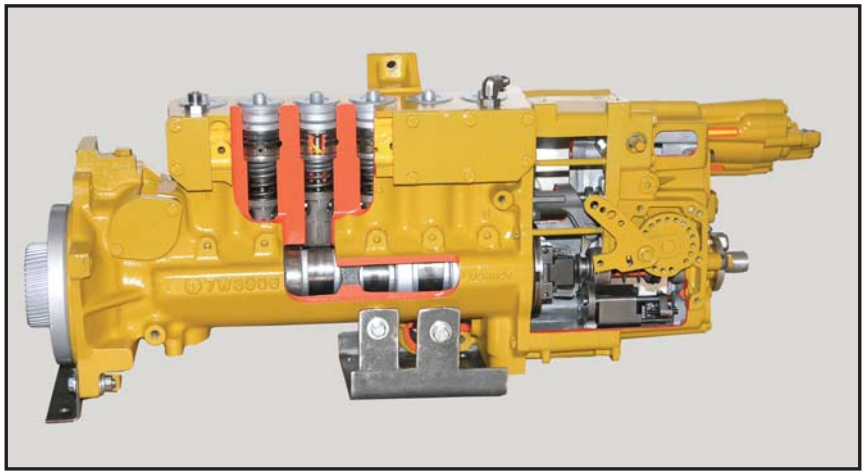
PT Cummins Diesel Injector Pump
Model 6682



CAT 3208 Diesel Injection Pump
Model 6683

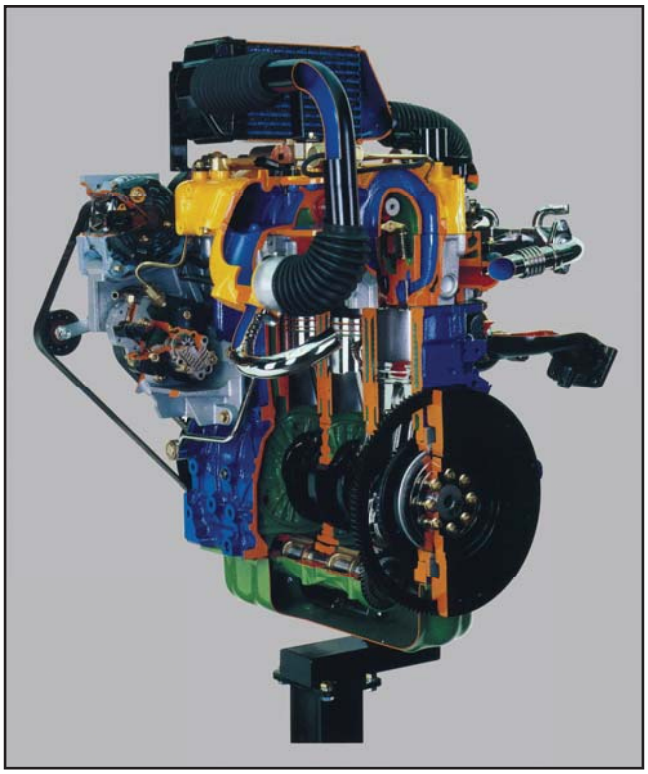


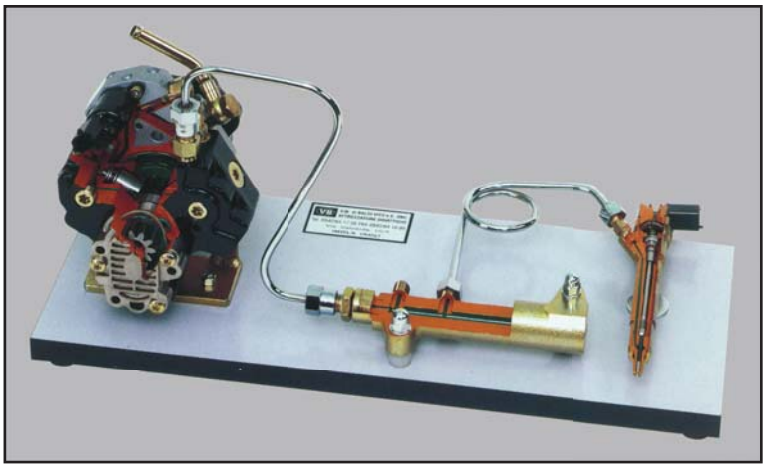
CAT 3304B Diesel Injection Pump
Model 6684

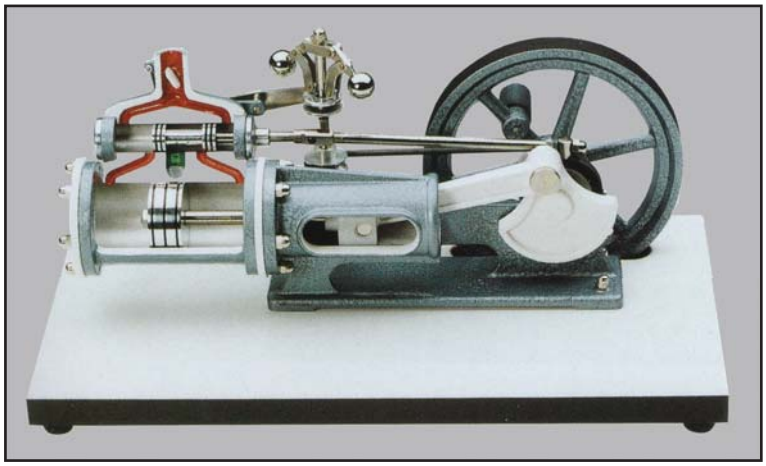


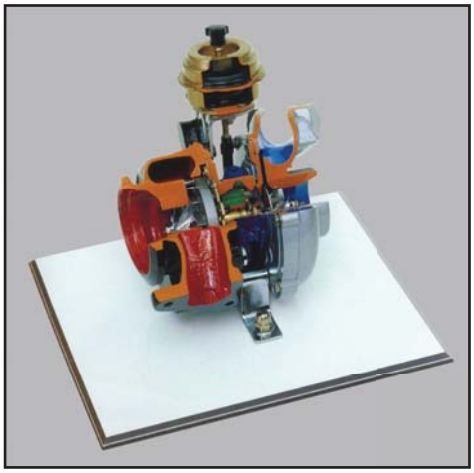
CAT 3406B Diesel Injection Pump
Model 6685

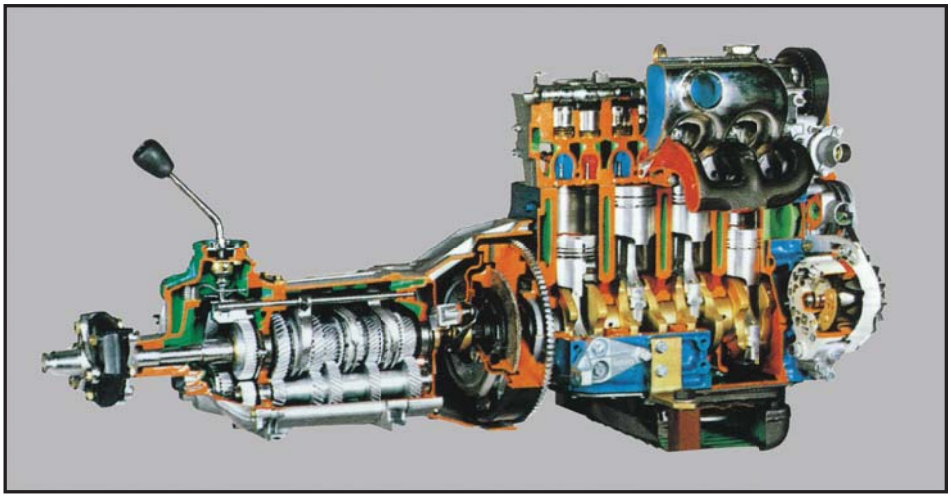
Cutaways











Check for Availability and Pricing

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E-mail: sales@atechtraining.com
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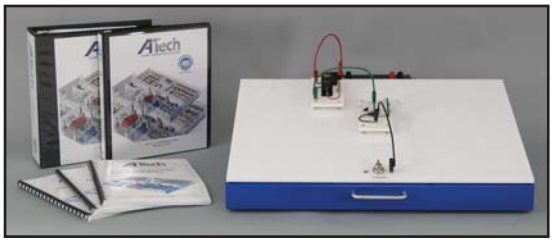
Four Area Certification Plan- Year 1

ATech's recommended certification program includes not only what is necessary to meet certification requirements but also modules which enhance student performance and maintain interest. The A6-Electrical/Electronics area is recommended as the starting section utilizing ATech's computer based GM S.E.T. "Virtual" Board Stages 1,2 and 3 or the AT1800CBI. Computer based "virtual" training is the educational environment that today's students find most comfortable. Traditional book-based programs are also available.

Phase 1-Electrical/Electronics

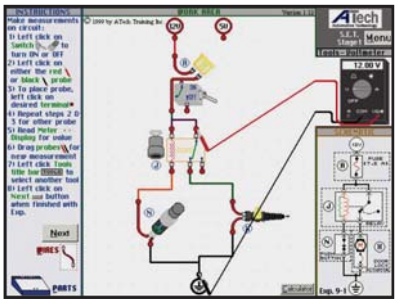


Traditional GM S.E.T.

or

1800 Series with CBI

or

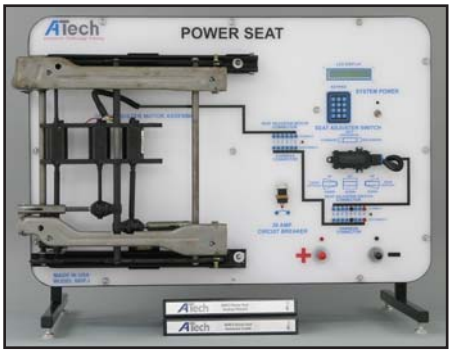


"Virtual" GM S.E.T.

While students are involved with the basic electrical/electronics program, have them also work with the **Shop Orientation and Safety Modules**. This maintains student interest throughout the "drier" materials.

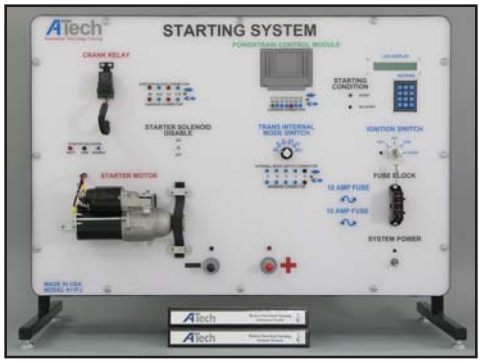
Phase 2- Advanced Electrical/Electronics System

9 Modules (Actual Car Parts)



Power Seat System
Model 860FJ

Lighting System
Model 821FJ



Starting System
Model 811FJ

OTHER MODULES INCLUDE:

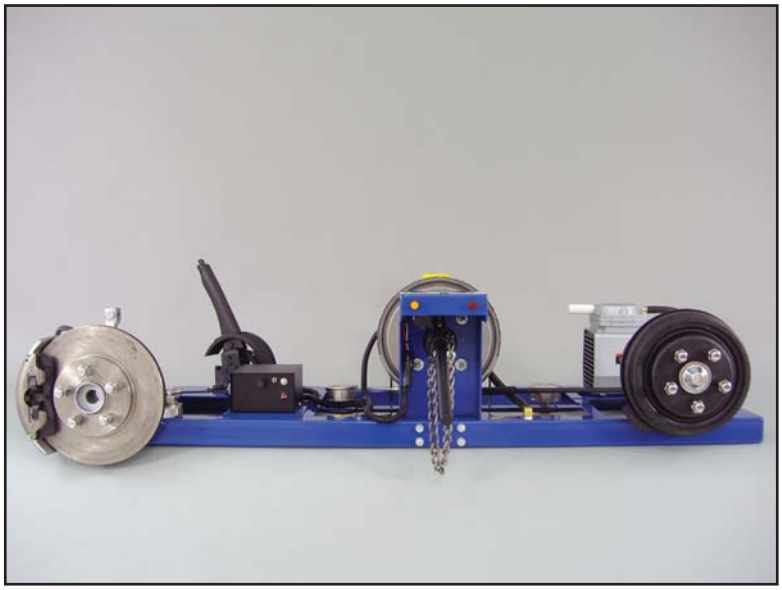
- Charging System- Model 812FJ
- Wiper/Washer System- Model 830FJ
- Power Door Locks System- Model 850FJ
- Instrument Panel System- Model 822FJ
- Power Windows System- Model 840FJ
- J1850 Network System- Model 3801

Any of the 9 Advanced Electrical/Electronics System Modules can be studied in any order.

A6 Certification Area NATEF Task Coverage:
100% of P1, 100% of P2, 100% of P3
230 Hours

Four Area Certification Plan- Year 1

Basic Brakes



Two Wheel Brake Trainer Model 400-2W

And/Or

Four Wheel Brake Trainer Model 400-4W

A5 Certification Area NATEF Task Coverage:
100% of P1, 100% of P2, 100% of P3
105 Hours

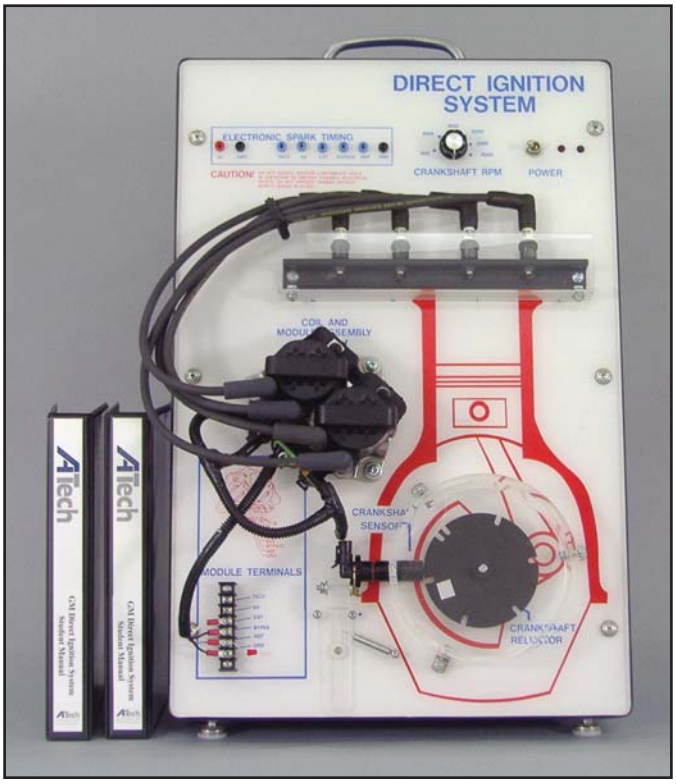
Four Area Certification Plan- Year 1

Basic Engine Performance

Basic Fuel Injection

Injector/Fuel Pump System
Model 670

Basic Injection Systems



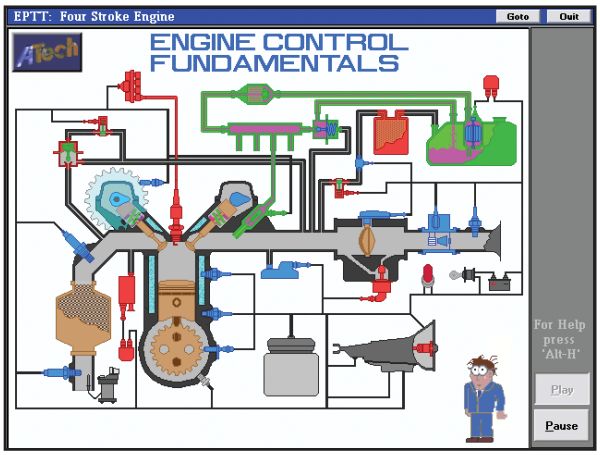
GM Direct Ignition System
Model 1711F

Four Area Certification Plan- Year 1

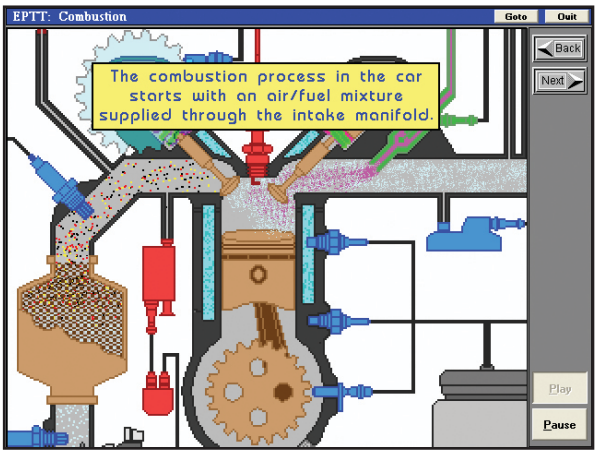
Basic Engine Performance

Engine Performance Troubleshooting Trainer
Model 3601

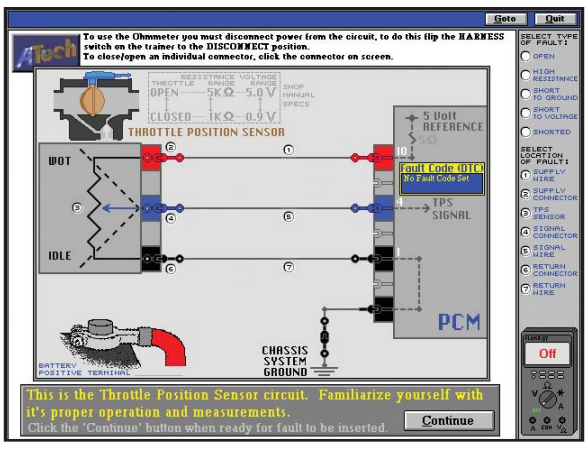
Interactive Software Programs for the 3601



3610
Engine Control Fundamentals



3620
Engine Control Systems Operation


Goto
Quit
To use the Ohmmeter you must disconnect power from the circuit, to do this flip the HARNESS switch on the trainer to the DISCONNECT position.
To close/open an individual connector, click the connector on screen.
THROTTLE POSITION SENSOR
WOT
IDLE
5 Volt REFERENCE
Fault Code (DTC)
No Fault Code Set
TPS SIGNAL
PCM
CHASSIS SYSTEM GROUND
BATTERY POSITIVE TERMINAL
This is the Throttle Position Sensor circuit. Familiarize yourself with it's proper operation and measurements.
Click the 'Continue' button when ready for fault to be inserted.
Continue
Off

3630
Engine Control Diagnostic Fundamentals

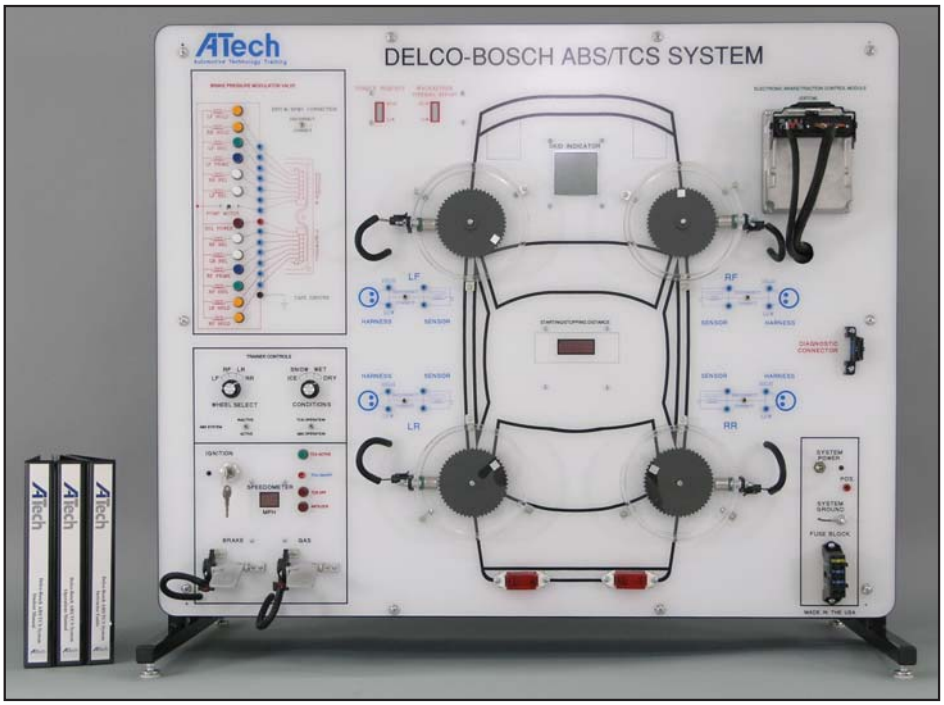
Four Area Certification Plan- Year 1

Basic Suspension and Steering

Suspension and Steering System
Model 500

Four Area Certification Plan- Year 2

Advanced Brakes



DELCO-BOSCH ABS/TCS Trainer
Model 1431/40

Four Area Certification Plan- Year 2

Advanced Engine Performance

Advanced Powertrain Controls

GM J1850 OBD II System
Model 2652

Advanced Automotive Emissions

Automotive Technology Trainer
Model 600

EVAP System
Model 640

Four Area Certification Plan- Year 2

Advanced Engine Performance

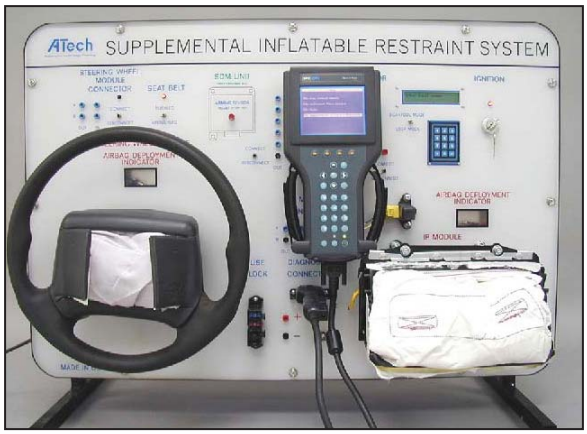
Advanced Ignition Systems

GM Electronic Ignition (EI) System
Model 1772

Ford EDIS-V Ignition System
Model 1791F

A8 Certification Area NATEF Task Coverage:
100% of P1, 100% of P2, 100% of P3
285 Hours

Advanced Suspension and Steering



GM SIR Dual Air Bag System
Model 1551

A3 Certification Area NATEF Task Coverage:
100% of P1, 100% of P2, 100% of P3
100 Hours

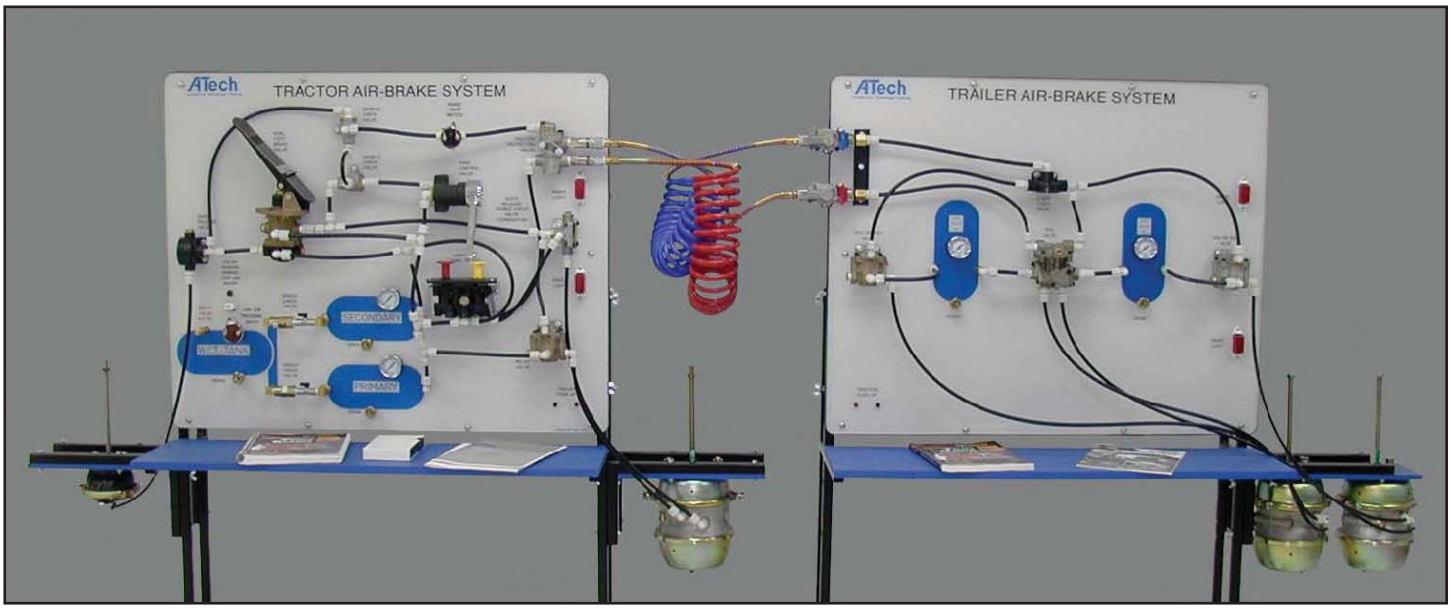
715 Total Program Hours

Diesel Four Area Certification Plan

Automotive/Diesel Technology

Phase 1 - Electrical/Electronics Refer to Page 67
Phase 2 - Advanced Electrical/Electronics Systems Refer to Page 67

Basic Brakes



Tractor and Trailer Air-Brake System Models 6410 and 6420

3-Axle Air-Brake System Model 6430

Diesel Four Area Certification Plan

Automotive/Diesel Technology

Basic Engine Performance Refer to Page 69

Advanced Engine Performance

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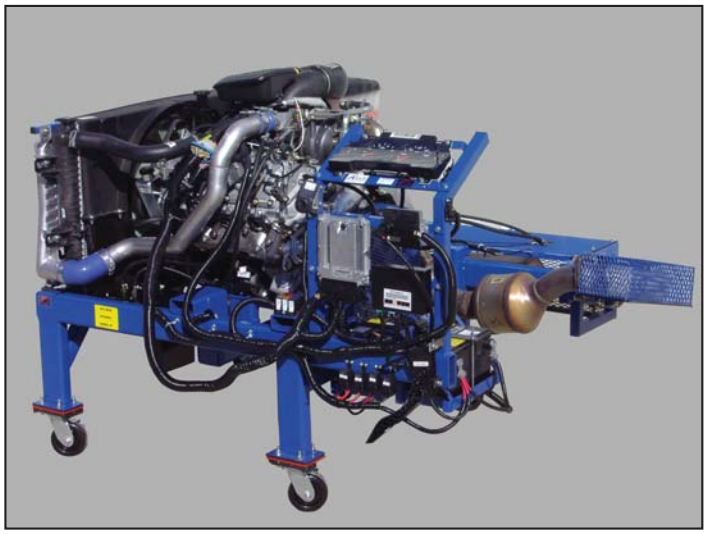
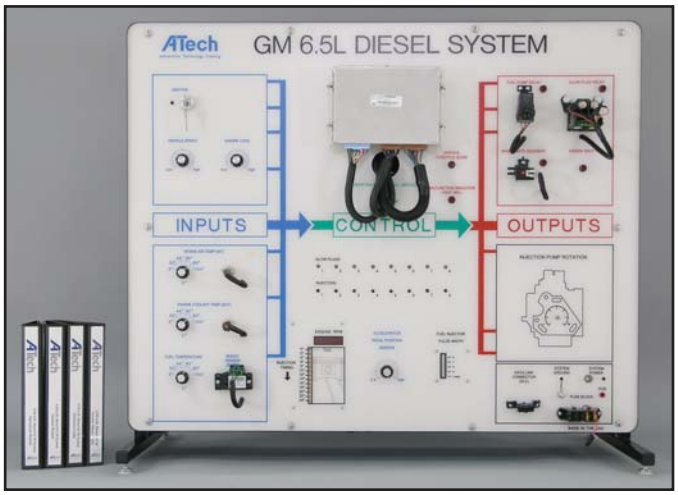


Engine Performance Trainer
Model 650D

Stanadyne DB2 Diesel Rotary Pump Cutaway
Model 6681

Advanced Powertrain Controls

GM 6.5L Diesel Injection Pump System
Model 6601



GM 6.5L Diesel System
Model 6611

Basic Suspension and Steering Refer to Page 71, Model 500
Advanced Suspension and Steering Refer to Page 73, Model 1551

ATech
Automotive Technology

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